DRAFT TASK 1, PHASE 1 REPORT

POTENTIAL IMPACT BY THE OLD GENTILLY LANDFILL ON THE ENVIRONMENT DUE TO THE PLACEMENT OF THE NEW TYPE III C&D LANDFILL – DOCUMENT REVIEW

FEMA-1603-DR-LA, ESF#10 TASK ORDER

Prepared for
The Federal Emergency Management Agency
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The Federal Emergency Management Agency (FEMA) requested assistance from National Infrastructure Support Technical Assistance Consultants (NISTAC) to evaluate and report on FEMA's Potential Environmental Liability, both short-term and long-term, for disposing hurricane-source debris at the New Gentilly Type III C&D Landfill (New Landfill), which directly overlies the former Old Gentilly Municipal Solid Waste Landfill (Old Landfill) footprint. The evaluation included reviews of existing documents, reports, and correspondences. The results of the NISTAC data evaluation were based on site visits and review of available technical engineering and hydrology documentation.

NISTAC concludes that there is an apparent lack of technical characterization data available to fully evaluate the geology and hydrology of the Old Landfill regarding effective groundwater monitoring system design as well as pre and post-closure detection monitoring issues. There are also issues concerning the quality and quantity of engineering assessment testing data for the New Landfill's protective systems design and construction.

The historic data shows the Old Landfill began its waste disposal history as a designated open dumpsite in 1961 covering an area 1.5 miles long by 0.3 mile wide, or approximately 230 acres. Documentation indicated that the waste disposal operation not only included the disposal of typical municipal solid wastes, but apparently also included household hazardous wastes, sewage sludges, and medical wastes. The Old Landfill facility owner and representative operator were continuously receiving site inspection reports prepared by the Louisiana Department of Environmental Quality (LDEQ) regarding repetitive infractions that involved lack of cover, vector control, and fire control, among other facility permit and regulatory compliance and operational issues.

NISTAC identified general technical concerns related to facility management, and permitting, closure, and technical reporting issues. Of specific concern was the lack of environmental site characterization data adequately defining the local geology and existing groundwater conditions. The need for a better definition of these conditions was magnified since the site was permitted to accept and dispose of a significant quantity of additional wastes to be placed on top of the old wastes. LDEQ regulations require specific environmental actions be conducted to evaluate similar sites to develop a technical understanding of site conditions, specifically regarding geologic and hydrologic site conditions relative to potential environmental impacts.

In general, NISTAC noted the following deficiencies or inconsistencies regarding the landfill's groundwater monitoring system wells.

- There were not enough wells to adequately represent groundwater quality or detect groundwater impacts over such a large facility area;
- The wells were not installed at appropriate locations to confirm, with a high degree of certainty or confidence, that representative groundwater quality at relevant downgradient points-of-compliance from the waste unit had not been impacted by a potential release;
- The wells were not installed to depths that give confidence in the represented groundwater flow directions of the upper aquifer, and were not installed to evaluate groundwater flow or potential impact to underlying aquifers;
- Recent analytical data for groundwater collected from eight temporary groundwater wells in the landfill area indicated elevated dissolved petroleum organics were discovered within the

Old Landfill leachate fluids. Over the 15-year period of routine groundwater sample events, the six permanent groundwater monitoring wells were not analyzed for a range of critical organic chemicals. Therefore, there is no degree of certainty or confidence that the upper aquifer or deeper aquifers have not been impacted from dissolved organic contaminants of concern.

- The wells were not tested or evaluated to determine or confirm that the local aquifer zones are hydraulically interconnected or are potentially influenced by tidal fluctuations within the facility's boundary.

With respect to the landfill design and construction, NISTAC concludes the following landfill design/construction items are in question:

- The viability of the roughly compacted 1.5-foot to 2-foot thick closure cap under the anticipated loads placed on it by the New Landfill;
- The viability of this same cap to act as a viable cap/liner under a waste loading (disposal) rate 10 to 20 times that originally permitted;
- The release/production of leachate and other waters of consolidation released during the anticipated 25-feet of landfill settlement;
- The non-conservative evaluation of the projected landfill settlement of both landfills, due to the use of average and not reasonable, yet more conservative parameters;
- The New Landfill's slope stability evaluation was not adequately conservative; it included the use of average geotechnical values and not more conservative, higher, values for the Old Landfill waste thickness, the peat thickness, and their material properties;
- No provisions were included in the landfill design allowing for venting of landfill gasses from beneath the Old Landfill's closure cap, potentially producing unsafe operating conditions at the site;

After review of available site data, NISTAC has identified the following key areas of concern that could potentially contribute to FEMA's environmental liability and risk at this site:

- the potential for groundwater contamination due to the release of the Old Landfill's leachate;
- the potential for surface water run-off contamination from both the New Landfill operations and from the Old Landfill leachate being released at the ground surface due to the release of compaction waters (leachate) of consolidation;
- uncontrolled explosive and/or fire source gasses being emitted from both landfills; and
- potential damage to the old landfill cap/new landfill liner due to settlement and stability of the new landfill on top of the old landfill.

Based on these findings, NISTAC concludes that FEMA could potentially be exposed to high risk of future environmental liability based on current conditions and environmental history of this site.

2.1 PURPOSE

The purpose of this project is to evaluate and report on FEMA's Potential Environmental Liability, both short-term and long-term, for disposing of hurricane-source debris in the New Gentilly Type III C&D Landfill (New Landfill). The basis of the evaluation was requested by FEMA to include review of existing documents, reports, and correspondences; landfill site visits and/or site inspections; and interviews (if determined necessary). FEMA also requested that, assuming that the landfill could prove to be an environmental liability to the agency, NISTAC evaluate alternative debris disposal sites in lieu of disposal at the New Gentilly Landfill.

In general, the key area of concern that could contribute to FEMA's environmental liability at this site is contamination of the environment due to: the Old Gentilly Landfill's (Old Landfill's) waste mass; the waste load inspection/control mechanisms and their implementation for acceptance of current debris wastes; the acceptance and disposal of asbestos on-site; and current site operations. The environmental contamination concerns include:

- Soils above the groundwater
- Groundwater adjacent to and underneath the landfill
- Surface water run-off from the site
- Air Emissions from both landfills
- Damage to old landfill cap/new landfill liner due to operations (with potential subsequent groundwater, surface water or air emissions)

2.2 SCOPE

This Task 1 Report (Report) has been prepared as a deliverable for the first of several tasks and phases of work to be conducted by NISTAC under this project. This Report represents the deliverable for Task 1, Phase 1 "Potential Impact by the Old Gentilly Landfill on the Environment due to the Rapid Placement of the New Type III C&D Landfill – Document Review." In this Report, NISTAC summarizes its review of readily available documents and data; identifies data/document gaps that need to be filled to assist in this basic evaluation of the site; provides an evaluation of the information reviewed; and presents our recommendations for additional data/document collection and engineering calculations to be performed using existing data. Also presented in this Report is a list of additional field work that might be necessary to complete our review of the potential impact of the Old Landfill on the environment (with or without the operation of the New Landfill).

The second phase of Task 1, if directed by FEMA, will be for NISTAC to conduct some initial analyses based on existing data to fill in any evaluation gaps in the information gathered. If at the end of Task 1, Phase 1, NISTAC concludes that the existing information verifies the likelihood of the Old Landfill to negatively effect the surrounding environment, with or without the New Landfill operations, then no further evaluation will be warranted.

The Old and New Gentilly Landfills occupy approximately 230 acres in the City of New Orleans, Orleans Parish, Louisiana located approximately ½ mile west of Read Boulevard along the south side of Almonaster Avenue **(Figure 1)**. Municipal solid waste (MSW) from the Old Landfill operation covers 203 of these acres. The New Landfill is operated on the same 230-acre parcel, and is for the most part, directly on top of the Old Landfill. **Figure 2** depicts the approximate footprints for both the Old Landfill and the New Landfill. he facility is adjoined by another landfill (KC Landfill) to the west, a construction company (BO Brothers Construction Company – sitting on another old landfill) to the east, an unnamed former landfill to the north (south of Almonaster Avenue), an automobile junkyard to the north across Almonaster Avenue, and the Intercoastal Waterway to the south. These landfills are situated in an industrial area, with interspersed, undeveloped swamp and marsh land (based on EE&G Restoration LLC – 11/9/05).

Figure 1 Site Location Map and Local Land Uses

Figure 2 Old/New Gentilly Landfill Footprints

For this first Phase of Task 1, NISTAC evaluated whether the available existing reports, permit documents and other accessible historical landfill related documents are sufficient to demonstrate that adequate control is provided for possible environmental releases from the Old Landfill or operation of the overlying New Landfill. The vast majority of the documents reviewed were obtained from the LDEQ electronic database provided to NISTAC by FEMA. The documents reviewed did not appear to include all possible LDEQ files, as several recent documents for 2005 were not available. A list of these documents can be found as **Appendix A** to this Report.

NISTAC also reviewed federal and state regulations applicable to this evaluation including:

- Code of Federal Regulations Title 40- Protection of Environment, Chapter I--Environmental Protection Agency, Subchapter I--Solid Wastes Part 258 – Criteria for Municipal Solid Waste Landfills; and
- State of Louisiana Title 33- Environmental Quality, Part VII Solid Waste, Subchapter B. Landfills, Surface Impoundments, Landfarms - §709. Standards Governing All Solid Waste Disposal Facilities (Type I and II).

Specific documents reviewed include:

- Old Landfill closure plans and subsequent revisions, Old Landfill closure plan permits, closure cap construction certification reports, closure cap design document drawings and specifications, LDEQ notices of violation, EPA site evaluations, correspondences between the City of New Orleans and the LDEQ regarding the site operations to thickness of the clay cap installed, periodic groundwater monitoring reports and/or monitoring data, local groundwater well information;
- New Landfill final permit documents and appendices including settlement and stability analyses of the old landfill cap and underlying clays, and groundwater monitoring plan and/or monitoring data;
- Existing and emergency state (LDEQ) and local (City/Parish) regulations for Class III C&D Landfills and for C&D definitions;
- Existing LDEQ regulations for Type II municipal waste landfills;
- LDEQ asbestos disposal requirements;
- EEG Restoration, LLC Phase I and II Environmental Site Assessment;
- EPA's Memorandum to John Connolly (FEMA); and
- Other readily available documents

Summaries of NISTAC's document review are included, by category, in the subsequent sections of this Report.

Many of the terms used in the following discussions are based on Louisiana Title 33, Part VII, Subpart 1, Chapter 1, General Provisions and Definitions (§115). Definitions of the terms used in this report are provided in Section 12.

On January 10, 2006, the NISTAC Landfill Assessment Team visited the landfill and was given a tour by Mr. Patrick Roth with Durr Construction. This site visit was conducted to familiarize the team with the landfill's existing site conditions and to assess the current groundwater monitoring well system. All six existing groundwater monitoring wells were located, identified, and photographed. With the exception of soil settling and washout observed below several concrete well pads, the wells appeared to be in good condition, and all were secured with a padlock.

Perimeter stormwater control berms that control landfill run-off and prevent offsite stormwater from entering the site had been completed on the northern, western, and southern flanks of the New Landfill operation area. No stormwater control berm was installed on the eastern side of the operation area controlling run-on/run-off to or from the landfill. No signs of leachate breakouts or discolorations of the soils in the stormwater ditches at the base of the berms were detected.

After the site tour and review of the available documents, NISTAC concluded that there were several technical issues and deficiencies relating to past environmental and operational actions. These deficiencies are identified in the following sections and are summarized in Section 10.

6.1 SUMMARY OF PERMITS AND REGULATORY ACTIONS TAKEN

The following list represents a brief summary of key facts about the Old and New Landfills and their permitting history:

- Overall the Old Gentilly Landfill consists of approximately 230 acres.
- The waste footprint covers about 203 acres, including some wastes from other adjacent dumpsites.
- The Old and New Landfills are surrounded by industrial uses and other regulated and non-regulated landfill and non-operational dumpsites.
- The Old Landfill operated as a pre-Subtitle D facility (open dump) between 1961- 1986 (when it stopped receiving waste).
- During its operational period (1961-1986), the Old Landfill received municipal solid wastes, sanitary sewage sludge, hospital/medical wastes, and small quantities of unknown hazardous wastes.
- The Old Landfill was placed on the U.S. Environmental Protection Agency's (EPA's) Open Dump Inventory on October 27, 1980 (as were all operating dumps/landfills until proven otherwise).
- In 1980, LDEQ issued a Compliance Order to close the site by 1985.
- The LDEQ issued the site's first operational permit (temporary permit) on June 25, 1981 (IP-0071).
- An Initial Closure Plan for entire site was issued in 1983.
- A Revised Closure Plan was issued in October 1987.
- In 1989, a 0.5-foot thick layer of clay soils was reportedly placed on top of all exposed waste as part of the Phase I Closure activities (no design documents, certification report, or other documentation was found to support this activity took place) and six groundwater monitoring wells were installed (first groundwater monitoring wells placed at the site).
- Revised Closure Plan issued November 1995.
- Revised Closure Plan issued November 1996.
- In March, 1997 a 2-foot thick "compacted" clay cap and 6 inches of top soil were placed on 43 acres during Phase 2 Closure (Gentilly Landfill Phase II Closure Certification Report, June 2004);
- Revised Closure Plan issued February and July 1998.
- Revised Closure Plan issued January 1999.
- In May of 2002, a total of up to 1.5 feet of "compacted" clay was verified to be overlying 143 acres during the Phase III Closure activities. Pre-existing clays or other soils already found to be overlying the waste were counted as part of the 1.5 feet of clay cap (Gentilly Landfill Phase III Closure Certification Document, Earth Tech, May 15, 2003).

- All but 17 acres of the Old Landfill had some form of clay cap placed by May 9, 2002.
- A Permit Application for New Type III C&D Landfill was submitted in October 2003.
- A Revised Permit Application for New Type III C&D Landfill was submitted in October 2004.
- The New Landfill was permitted on December 28, 2004 with the stipulation that the site be secured with a fence, that a funding mechanism for the post-closure care of the new landfill be properly setup, and that all environmental control systems listed in the permit application be in place (including surface water control systems) prior to commencing with operations.
- Due to the emergency conditions associated with Hurricanes Katrina and Rita in the summer of 2005, landfill operations for the New Landfill commenced on September 1, 2005, prior to the facility being completely fenced, the post-closure funding mechanism being setup, and the stormwater diversion berms being installed.
- Numerous LDEQ inspection reports were issued during the operation of the landfill between 1981 and 1989 (when the first Phase of the Closure Plan was completed) noting that the old landfill had not placed any cover over the wastes, allowing for vector (rats, birds and insects) access to the waste.
- Numerous inspection reports were issued stating that the operator used pesticides and insecticides for vector control.
- After the landfill stopped officially receiving wastes and throughout the landfill closure period, the LDEQ continued conducting site inspections (on a less frequent basis) and continued to note exposed wastes at the site up until the completion of the Phase III closure cap placement (at which time the entire site, except for 17 acres, had received some thickness of clay cap).

A thorough summary compiled by LDEQ of the permit, inspection, and key activities that took place between 1980 and 2005 with respect to the Old Landfill is included in **Appendix B**.

Groundwater contamination and related environmental issues that were evaluated include:

- Groundwater flow direction, transmissivity and hydraulic conductivity of the contiguous soils;
- Local geology and hydrogeologic conditions for possible releases of landfill leachate or dissolved chemicals-of-concern (COCs) directly or indirectly into the local groundwater from the old landfill waste;
- Possibility of groundwater impact from adjacent landfills and auto salvage operations;
- Potential influence of tidal fluctuations on migration of dissolved COCs in local shallow and/or deep groundwater aquifers; and
- Historical analytical groundwater results for dissolved COCs potentially relating to the former landfill footprint area.

7.1 SUMMARY OF GROUNDWATER AND SUBSURFACE SOIL DOCUMENTS REVIEW

To better understand the subsurface soils and groundwater aquifer regimes that could potentially be impacted by the Old Landfill, the NISTAC team reviewed the available documents to find descriptions of these systems. No thorough descriptions of the groundwater system(s) or geologic formations were found, so the review relied on data (**Appendix A)** from recorded geotechnical boring logs and groundwater monitoring well logs associated with the Old Landfill and surrounding areas.

The Gentilly Landfills are located in the Gulf Coastal Zone physiographic province. Recent Holocene age alluvial sediments comprise most of the organic clays, clays, silts, and discontinuous silty sand lenses in the vicinity of the facility. These sediment types are typical of prograding Mississippi River deltaic and flood plain sediments that have been deposited over more recent and older shorelines and offshore bar and bay muds.

There are three regional aquifers that may produce fresh water locally (EE&G Restoration LLC – 11/9/05):

- Shallow Aquifer: less than 50 feet deep and characterized by discontinuous, low transmissivity sediments
- Norco Aquifer (also referred to as the 400-Foot Silty Sand Aquifer): approximately 300 feet deep;
- Gonzales-New Orleans Aquifer (also referred to as the 700-Foot Silty Sand Aquifer): the thickest aquifer at 550 feet deep.

Data obtained from the initial six monitoring well borings (MW-1 through MW-6) advanced by Foundation Testing Laboratories, Inc. (April 1989), the one replacement well (MW-6RI) boring log by Eustis Engineering Company (September 1995), logs for five geotechnical borings (CB-1 through CB-5) advanced by Metroplex Industries, Inc. (Metroplex) (September 1992), and eight soil boring logs from Eustis Engineering Company (August 1981) were used to develop an understanding of the local hydrogeology within and surrounding the site.

A map of the landfill including the locations of the borings reviewed from the above listed reports is included in **Figure 3**. The NISTAC team prepared three cross-sections, the locations of which are also shown in **Figure 3**.

Cross-section A – A', depicted in **Figure 4** is oriented east west, looking northward. This section extends almost 8,800 feet through the entire length of the Old Landfill's waste mass. Note the following from Cross-section A – A':

- The trash layer exists across the site from east to west at depths ranging from no trash at MW-5 to an 18-foot thick layer of trash at CB-1 in the west central landfill area;
- A pronounced humus material layer is present in all the geotechnical borings within the landfill footprint. This humus layer ranges from no humus in MW-5 (west) or in MW-2 (east) to a 14-foot thick layer at CB-5 in the eastern landfill area;
- A pronounced fine-grained silty sand layer is present in three geotechnical borings within the central landfill footprint. This silty sand is seen in geotechnical borings CB-1, CB-2, and CB-3, ranging from 8 feet thick in CB-1 and CB-2 to an 18-foot thick silty sand at CB-3 in the south-central landfill area. The silty sand layer appears to be in direct contact with the humus material layer at CB-1 and CB-3;
- A 7-foot thick sandy clay layer is present at CB-4 beneath the humus layer;
- Gray clay is present either below the humus layer or the silty sand layer; and
- The groundwater table appears to be very shallow (2 to 6 feet below ground surface) with a westerly flow direction.

Cross-section B – B', shown in **Figure 5,** is oriented north to south, looking to the west. This section extends over 2,300 feet across the western edge of the landfill, roughly perpendicular to Cross-section A - A'. Cross-section B – B' shows:

- The trash layer exists at depths ranging from no trash at MW-5 to an 18-foot thick layer at CB-1 and appears to be tilted to the south;
- A humus layer present in geotechnical borings CB-1 and CB-2, and in MW-6RI appears tilted to the south, ranging from no humus in MW-5 (south) to a 5-foot thick layer at CB-1 that thins to 3 feet at MW-6RI;
- An 8-foot thick fine-grained silty sand layer is present in both CB-1 and CB-2;
- The humus layer at CB-1 is in direct contact with the silty sand layer, whereas a 5-foot thick clay layer overlies the silty sand in CB-2;
- An 8-foot thick sandy silt layer is present in MW-6RI, which is laterally equivalent to the silty sand layer seen in CB-1 and CB-2;
- Gray clay is present either below the silty sand and sandy silt layers; and
- The groundwater table appears to have a northerly gradient (flow direction).

Cross-section C – C', shown in **Figure 6**, was prepared to evaluate the local geology, particularly outside of the landfill footprint. This cross-section is oriented north-south, looking to the west.

Figure 3 Site Plan and Cross-Section Map

Figure 4 Cross-Section A-A'

Figure 5 Cross-Section B-B'

Figure 6 Cross-Section C-C'

This section extends over 2,200 feet across the western boundary of the landfill. Cross-section C-C' shows:

- An approximate 5-foot thick trash layer exists in borings MW-6 and MW-6RI, with no trash at MW-5;
- A green clayey silt is present in MW-5 and MW-6;
- A 3-foot thick humus layer is present only in MW-6RI;
- The humus layer at MW-6RI is in contact with an underlying clayey silt and silty clay;
- The groundwater table appears to flow north.

7.2 EVALUATION OF AVAILABLE HYDROGEOLOGIC INFORMATION

This section includes an evaluation of the local geologic and hydrogeologic conditions presented in Section 7.1, and described in numerous LDEQ documents that were reviewed (**Appendix A).**

7.2.1 Humus Layer Evaluation

On September 20, 2002, five geotechnical soil borings were advanced by Metroplex within the Old Gentilly Landfill. These borings detected what was identified as a humus layer existing beneath a layer of trash waste material. The trash layer overlying the humus was described as being "dark gray with soft clay seams, sand, silt, gravel, plastic, plastic pipe, wire, broken glass, grass, fabric, organics and odor," becoming dark gray color with humus noted in several borings. The underlying humus layer ranged between five and fourteen feet thick, and was described as a "black, very fine-grained sand, extremely soft clay, extremely soft, organics, odor, with waste intrusion and wood fragments."

This humus layer identified within the landfill is of interest, not only because of its presence beneath the landfill's waste material, but also because of the properties of humus. Humus is highly organic and has a profound effect on the structure of many soils, giving the upper layers a dark color. It is mostly made up of extremely stable carbon compounds with no phosphorus or nitrogen. Humus is the stable, long-lasting remnant of decaying organic materials and decomposable organic residues, such as from the breakdown of vegetation, wood material, paper, and organic municipal wastes that combine with native soil. Through chemical and biological oxidation and reduction, a synthesis of complex organic compounds causes soil particles to bind into structural units called aggregates. These aggregates actually loosen and create a granular and porous soil condition, allowing water to easily infiltrate and percolate downward through this layer.

The soil boring descriptions for all five Metroplex soil borings present a humus layer beneath the landfill waste material. This humus layer is mostly composed of degraded waste material mixed with some natural highly organic humus-like material. Soil grain-size classification test results in soil boring CB-5 show the humus material is almost 100% moisture saturated. However, there were no permeability test results presented to indicate the ability for water to move through the humus layer.

The three cross-sections prepared (Figures 2, 3, and 4) show the subsurface geology and how the municipal waste layer is in direct contact with the humus layer, which directly overlies the silty sand and sandy silt layers, as seen in borings CB-1, and CB-3. Our data review did not find any previous subsurface characterization or evaluation documentation that acknowledged the presence of these subsurface conditions beneath the landfill. These conditions are a prime concern since they allow vertical and horizontal migration of any dissolved contaminants of concern from the landfill directly into the surrounding groundwaters.

In contrast to the humus layers identified beneath the landfill's waste material, naturally-occurring humus layers in the surrounding soils were found to be much thinner and shallower than those the humus layer found beneath the landfill (**Figures 4, 5, and 6**). To further verify this unusual circumstance, geotechnical soil borings conducted by Eustis Engineering Company (EEC, 1980 – 1981) in areas adjacent to the Old Landfill were reviewed to evaluate the types of deltaic and wetland soils in the vicinity of the landfill. The additional borings reviewed included borings B-38 and B-46, located on the northeast portion of the landfill, and borings B-22, B-24, B-39, B-42, B-43, B-44, B-47, and B-48 located west and north of the landfill property. The other Eustis Engineering Company borings were located too far from the landfill to be useful for this evaluation.

Almost half of the borings reviewed encountered a dark humus layer that averaged approximately 5 feet deep and 3.5 feet thick. All of these boring were within one mile north of the Gulf Inter-Coastal Waterway, which sits immediately adjacent to the southern edge of the Old Landfill site. These borings do not indicate a continuous humus layer existing below a depth of 12 feet (the depth of humus found in the old landfill). The average humus layer thickness in the sub-regional area ranged from less than 0.5 feet to 5 feet thick. **Figure 7** indicates the humus layer thickness found underlying the landfill footprint area.

Looking at both **Figure 4** and **Figure 7**, it can be seen that the humus layer within the landfill footprint is both deeper and thicker than the average humus layer found in the surrounding contiguous area.

Boring CB-5 (within the landfill) had a humus layer 14 feet thick between 16 and 30 feet deep, and boring B-39 had a humus layer 8 feet thick between 7.5 and 15.5 feet deep. In boring B-39 located at the northeast portion of the landfill, a layer of crushed glass was noted at the base of the humus layer at 15.5 feet deep. This indicates that the humus materials found are very likely to be decomposed trash with the organic portion transformed (except for the glass materials found) to a humus-like material (a condition that is not unexpected, especially considering the very high groundwater conditions on-site). The additional weight of the landfill waste layer indicated in B-39 possibly caused the naturally occurring humus to subside. This waste also, very likely, contributed to the thicker humus layer. **Figure 8** shows the trash layer thickness over the adjacent private landfill area, which corresponds closely to the atypical thick and deep humus layer associated with the landfill footprint. A complete assessment of the adjacent landfill areas would be helpful to assess environmental exposure and contaminant migration routes.

Figure 7 Humus Layer Thickness Map

Figure 8 Trash Layer Thickness Map

7.2.2 Silty Sand Layer

The silty sand layer identified beneath the south-central portion of the Old Landfill footprint could significantly influence possible horizontal and limited vertical migration to an interconnected lower aquifer, especially if any chlorinated dense non-aqueous phase liquid (DNAPL) solvents are present in the Old Landfill's waste mass. Since monitoring well boreholes at MW-3, MW-4 and MW-5 were not logged below 18 or 19 feet deep, no information exists that indicates whether or not the silty sand layer detected underneath this portion of the landfill could, in-fact, continue south toward and possibly beneath the Mississippi River Gulf Outlet (MRGO) Inter-Coastal Waterway. **Figure 9** shows a silty sand thickness map, which illustrates the silty sand lens beneath the west-central portion of the landfill and a second discontinuous lateral equivalent silty sand lens at the north and east portion of the landfill.

This silty sand is over 18 feet thick in some areas beneath the landfill footprint. Review of the provided geotechnical logs indicates the silty sand layer is most likely related to the Pine Island Barrier Bar system. As presented in Chapter A of the United States Geological Survey (USGS) Professional Paper 1634, the Pine Island Barrier Bar is a 6,000 year-old sand body created by sandy sediment being deposited at the mouth of the Pearl River delta. Ocean currents moved the sand westward and redeposited it along an ancient offshore sandbar, or barrier bar. **Figure 10** shows the location of the Pine Island Barrier Bar which appears to exist beneath the Old Gentilly Landfill area. The Pine Island Barrier Bar system has been identified as almost two miles wide running west-southwest from Rigolets, Louisiana near the mouth of the Pearl River to beneath the MRGO and extending to the western part of Metairie, Louisiana, a distance of almost 48 miles.

The regional geological evidence and direct borehole evidence reviewed strongly indicates that the silty sand layer is most likely related to the Pine Island Barrier Bar System, and appears to be in direct contact with the overlying degraded humus-like trash material at several locations within the Old Landfill. There exists a concern that contaminants released from the overlying landfill material could impact the underlying barrier bar sand aquifer.

7.2.3 Tidal Effects on Groundwater

Review of the semi-annual sampling and groundwater gauging reports from 1989 through 2004 found no mention of possible tidal or water quality influence from seawater. A general observation of the analytical groundwater data shows possible elevated chloride and specific conductivity results from wells closer to the MRGO, as opposed to results observed in MW-1 located over 3,000 feet north of the waterway. Also, the up-gradient wells MW-2, MW-3 and MW-4 are all located along and parallel to the MRGO, which has been deepened to a depth of approximately 50 feet to accommodate fishing and barge traffic. Gauging these wells with the high and low tides could help determine if there is possible tidal influence and mixing of seawater with local groundwater. If the silty sand layer is hydraulically connected to the adjacent marine environment, any dissolved chemicals of concern coming from the Old Landfill wastes could negatively impact the nearby marine environment.

Figure 9 Silty Sand Thickness Map

Figure 10 Pine Island Barrier Bar System

7.2.4 Adequate Waste Composition and Groundwater Analysis

No definitive data representing the types of wastes placed into the old landfill were found in the documents reviewed. However, some general descriptions of the wastes included in a few EPA forms (1980, 1981, 1992), list municipal solid wastes, sewage sludges, some hazardous wastes and medical wastes as materials disposed at the Old Landfill site. There also have not been any historical characterization studies of the Old Landfill's waste mass, the groundwater in contact with it, or the underlying organic humus layer for volatile or semi-volatile organics or other chemicals of concern.

Historical groundwater monitoring results, from the periodic groundwater monitoring reports prepared by the City of New Orleans engineering consultants, have indicated low but elevated metals that periodically exceeded LDEQ's Risk Evaluation Corrective Action Program (RECAP) standards.

Although the "…groundwater in the Gentilly Landfill vicinity is characterized by LDEQ to be of poor water quality (Class 3 non-potable groundwater)," as quoted by EPA in a letter to FEMA (dated November 11, 2005 - Section III.B.4 "Groundwater" - Page 7), that does not mean that the local groundwater aquifers are unimportant or not a concern.

7.2.5 Most Recent Landfill Site Evaluation and Field Studies

A Baseline Phase II survey report, titled "Limited-Scope Phase I & Baseline Phase II Environmental Site Assessment," (November 9, 2005) was prepared by EE&G Restoration, LLC (EE&G) to assess the present conditions of the Gentilly Landfill prior to the commencement of placing recent hurricane debris in the New Landfill. This Phase II report summarized the results from collecting and analyzing near-surface soil and sediment throughout the landfill area, in a proposed incineration area, and at other general site locations. The Phase II survey also included the installation, sampling, and analysis of the samples from eight temporary groundwater monitoring wells and sampling and analyses of groundwater from two existing site monitoring wells (MW-5 and MW-1). None of the soil boring logs, location maps, or figures (from this report) were available for NISTAC review.

The analytical results of EE&Ĝ's soil testing indicated no exceedances of the LDEQ's RECAP Screening Standards for metals, volatile and semi-volatile organics, polychlorinated biphenyls (PCBs), dioxins, pesticides, herbicides, or asbestos. The groundwater analytical results, however, showed impact within the shallow surface aquifer over the landfill area. The sample results indicated that pre-existing Recognized Environmental Conditions (RECs) were present at the Old Landfill site.

The shallow groundwater surrounding the Old Landfill showed impacts in seven of the temporary wells (5 to 15 feet deep) sampled and in both of the existing monitoring wells (MW-1 and MW-5) sampled. All of these wells exceeded the RECAP standards for the following constituents:

- Total Petroleum Hydrocarbon (TPH) DRO (Diesel-Range Organics)
- TPH ORO (Oil-Range Organics)
- Metals - Total Lead and Total Arsenic

Based on these recent findings, a more thorough characterization of the landfill waste, groundwater and local hydrogeology is warranted.

7.2.6 Well Construction

The Gentilly Landfill's current groundwater monitoring wells were installed as part of the Old Landfill's closure program. Groundwater monitoring well requirements, as they are described in State of Louisiana Title 33:VII.709.E (groundwater monitoring), were compared to the currently installed wells, based on available well construction information. Overall, the six site groundwater monitoring wells and one replacement well were constructed and installed prior to the most recent "Water Wells Rules, Regulations, and Standards, State of Louisiana" (Title 70: Part XIII) as adopted by the Louisiana Department of Transportation and Development, Water Resources Section, and set forth in the "Water Wells Rules and Regulations." Review of well construction logs and the limited field inspection (conducted during the January 10, 2006 landfill site visit) showed the wells had:

- Protective casing with locking cover and a secure locking device in place;
- At least four guard posts firmly anchored outside each well slab, but not in contact with the slab;
- Actual screen lengths were reported to be 2.5 feet long;
- Borehole diameters appeared to be drilled to allow at least 3 inches between the well casing and the borehole wall.

There were no signs or plates attached to the wells, but each well had stenciled lettering with the well identification number. The wells did not have any permanent well information regarding up-gradient or down-gradient status, elevation of top of well casing in relation to mean sea level (MSL), screen depth in relation to mean sea level, or date of well installation and any subsequent repairs.

Post Construction information regarding unusual occurrences such as grout loss was not provided in any of the groundwater monitoring reports. The Phase III Closure Cap Construction Plans noted that grout was to be injected into the void spaces underneath the slabs where soils/grout had notably subsided beneath them. The wells were apparently surveyed with respect to mean sea level or comparable reference point, but relevant surveyor documentation for the original six monitoring wells was not provided or included in the submitted data. The surveyor report was provided for replacement well MW-6RI

Monitoring well MW-6 was abandoned on July 19, 1995; the well monument was tilted due to inadequate support and local ground subsidence issues. Replacement monitoring well MW-6RI was installed on September 21, 1995.

Overall, the plugging and abandonment actions conducted for the facility monitoring wells and geotechnical borings appeared, at the time, to have been completed in accordance with LDEQ regulations.

7.3 GROUNDWATER MONITORING DATA EVALUATION

The groundwater monitoring system and analytical data provided for NISTAC review was evaluated by the City of New Orleans, the City's consultants, the LDEQ and others based on the current (1980's) EPA and LDEQ regulations and requirements for municipal solid waste landfills operating during that time frame. Neither the RCRA nor the LDEQ landfill regulations in the late 1980's were as stringent as they are today. The technical groundwater monitoring system and analytical testing requirements were not nearly as robust as the present regulations are, and therefore they were not held to today's landfill regulations and requirements. However, because a new Type III C&D landfill operating permit was issued to place up to 130 feet directly on top of the Old Gentilly municipal waste landfill footprint, the most prudent and reasonably conservative groundwater well installation and data evaluation requirements that should be applied to the New Landfill operation are the current Type II municipal waste landfill requirements, for protection of the local environment.

During the data evaluation, NISTAC identified general technical concerns that related to facility management as well as permitting, closure, and technical reporting issues. Of specific concern was the lack of adequate environmental site characterization data conducted prior to final site closure of the Old Landfill. To develop a technical understanding of site conditions, recent LDEQ regulations require specific environmental actions to be conducted to evaluate similar sites, specifically regarding geologic and hydrologic site conditions relative to potential environmental impacts. Even though the upper aquifer or underlying aquifer may not be direct potable water sources, any possible leachate release from the landfill could impact offsite environmental receptors such as wetlands and marine wildlife and their habitat.

The following report sections note and discuss the identified groundwater monitoring system concerns, deficiencies, and/or inconsistencies.

7.3.1 Insufficient Quantity of Groundwater Monitoring Wells

There were not enough groundwater monitoring wells to adequately represent groundwater quality or detect groundwater impacts over such a large facility area. The current LDEQ regulations for Type II landfills require:

1. "The number, spacing, and depths of monitoring wells shall be determined based upon site-specific technical information that must include thorough characterization of aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer; including, but not limited to: thickness, stratigraphy, lithology, hydraulic conductivities, porosities, and effective porosities…";
2. "Enough monitoring wells must be located hydraulically down gradient from the facility to yield samples that are representative of the groundwater passing the relevant point of compliance…"; and
3. "Spacing between down gradient wells shall not exceed 800 feet."

Based on the above LDEQ requirements, a landfill footprint encompassing some 203 acres, covering an area with an approximate length of over 1.5 miles by 0.3 miles wide, would normally require more than the six existing groundwater monitoring wells to address characterization and potential impacts to the both the shallow and deeper aquifers. Many factors such as site-specific geologic and hydrologic conditions, waste type, and depth of disposal are used to evaluate and determine an adequate number of permitted wells at a landfill facility. It would be reasonable to assume a facility the size of the Old/New Gentilly Landfill could possibly include 12 deep and 12 shallow nested wells (installed next to each other) placed around the landfill perimeter, with possible additional wells added based on the landfill's Sampling and Analysis Plan (SAP). Because there are so few, the six existing groundwater monitoring wells could not be expected to reliably detect landfill leachate migrating away from the landfill footprint.

7.3.2 Insufficient Number of Downgradient Monitoring Wells

As noted in the previous section, LDEQ regulations require enough monitoring wells hydraulically down gradient from the facility to yield samples that are representative of the groundwater passing the relevant point of compliance with at least two downgradient wells per zone monitored provided. The down gradient wells must be screened in the same zone as the up gradient wells.

Initially, the semi-annual groundwater reports noted that the up gradient wells were MW-1 and MW-2, with wells MW-3, MW-4, MW-5, and MW-6 as down gradient. This arrangement assumed that most near-surface aquifers are influenced by local topography, and the shallow groundwater will flow towards a water body (creek or river) with a topographically lower elevation. In the case of the original six monitoring wells, the uppermost aquifer should flow towards the south. However, over the last 15 years there was an observed opposite flow direction from south to north, as shown in most of the piezometric groundwater surface maps in most historic monitoring reports. Technically, monitoring wells MW-1 and MW-2 do meet the requirement for being two down gradient wells. However, these two wells were installed and reported throughout their sampling life as upgradient wells.

Two main items of concern are identified: 1) both of these down gradient wells are over 2000 feet distant from the nearest upgradient well; and 2) the well screens for all six original monitoring wells were installed and screened with no knowledge of the aquifer material in which it was placed. With the exception of MW-6RI, all monitor well boreholes were drilled and logged to between 18.5 feet and 19.5 feet below the local ground surface then were drilled to their final well depth without knowing the soil strata or aquifer in which the 2.5-foot long screened was placed. Monitoring well MW-6RI was installed directly through the edge of the Old Gentilly municipal waste landfill footprint. This monitoring well was drilled through a waste layer, a humus layer, a confining clay layer, and was then completed within an underlying sandy silt zone. This type of well completion could potentially cause cross-contamination by allowing landfill liquids or leachate to flow down along the well bore, either during or after drilling, into the lower underlying aquifer.

NISTAC's concern is that it is clearly unknown if the upgradient or downgradeint wells were completed within the same aquifer. The fact that they were completed to the same depth but over 2,000 feet apart is not adequate to conclude that they are screened in or representative of the

same aquifer. They cannot be used to determine true groundwater flow direction and subsequent sample results from the same groundwater aquifer. This type of well installation procedure is prone to significant error because floodplain sediments, which are typical of this area, can vary greatly in thickness and depth over short distances, resulting in groundwater measurements or sample results not representative of the site. Based on the reviewed data and initial assumption of up gradient or down gradient flow at the site, the six existing groundwater monitoring wells are not representative of either downgradient or upgradient groundwater conditions. Since the down gradient wells do not appear to be screened in the same zone as the up gradient wells, there is no high degree of certainty or confidence that groundwater flow directions have been adequately defined, or that water sample results from these wells can effectively detect a potential release from the Old Landfill.

7.3.3 No Monitoring Wells Installed to Monitor the Upper Aquifer

Soil boring and monitor well data show that the upper aquifer at the site exists between 2 to 5 feet below the local ground surface. However, all monitoring wells installed at the facility were completed in a deeper aquifer approximately 25 feet deep, and were screened in unknown soil types or lithologies. In near-surface shallow groundwater situations, the industry standard is to install and complete a shallow well in the upper aquifer, possibly 10 to 12 feet deep. A deeper monitoring well can then be installed through a sealed surface casing, possibly nested (nearby) with the shallow well. The site well data shows all monitoring wells were installed only within the deep zone, and no wells were installed within the upper (shallow) aquifer zone These site wells do not give a high degree of confidence that historic well data represents groundwater flow directions or water quality of the upper (shallow) aquifer.

The construction of the site wells does not conform with the guidance for shallow wells provided in the LDEQ and Louisiana Department of Transportation and Development December 2000 Handbook, *Construction of Geotechnical Boreholes and Groundwater Monitoring Systems.* For a shallow (3-foot deep) groundwater situation, a well completed to 10 feet deep from ground surface could include a 6-foot long screen, (5 feet wet and one foot dry), and a 6-foot long riser to complete to two-feet above ground level. This example would allow for a minimum 1-foot of filter sand above the screen, 1-foot layer of hydrated bentonite, and one foot of cement-bentonite grout to meet the well completion standards. A deeper monitoring well can then be installed through a sealed surface casing, possibly nested (nearby) with the shallow well. The site well data shows all monitoring wells were installed only within the deep zone, and no wells were installed within the upper (shallow) aquifer zone. These site wells do not give a high degree of confidence that historic well data represents groundwater flow directions or water quality of the upper (shallow) aquifer.

7.3.4 Monitoring Wells Not Analyzed for Representative Contaminants

Recent groundwater analytical data from groundwater samples collected from temporary wells within the landfill area indicated elevated dissolved petroleum organics were discovered within the Old Landfill leachate fluids (EE&G Report, November 9, 2005). Over the past 15-year period of routine groundwater sample events, the six monitoring wells were not analyzed for a range of critical organic chemicals. The New Landfill's groundwater monitoring analysis should

include the Detection Monitoring Program for Type II landfills, as listed in LAC 33:VII.3005 Table 1.

The use of a 2.5-foot long screen at 25 feet below ground surface does not allow for representative groundwater samples to be collected from the uppermost water table aquifer at less than ten feet deep and does not allow for detection of floating, light non-aqueous phase liquids (LNAPLs). No characterization was conducted to determine the presence or background concentrations of critical organic chemicals, and there is no degree of certainty or confidence that the upper aquifer groundwater or deeper aquifers have not been impacted from dissolved organic contaminants of concern.

7.3.5 Monitoring Wells Not Tested for Tidal Influence

The provided well data shows that none of the six original or the replacement well were ever hydraulically tested or monitored over time to determine or confirm that the local aquifer zones are hydraulically interconnected or, more importantly, influenced by tidal fluctuations within the facility's boundary. The LDEQ regulations state:

> "The number, spacing, and depths of monitoring wells shall be determined based upon site-specific technical information that must include thorough characterization of aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer; including, but not limited to: thickness, stratigraphy, lithology, hydraulic conductivities, porosities, and effective porosities."

Based on the data and documents reviewed, there has been no adequate characterization of the above-listed regulated items. Specifically, identifying seasonal and temporal groundwater fluctuations due to possible nearby tidal influence could alter the understanding of the site hydrology. When dealing with a combined freshwater and near marine environment, it is extremely important to characterize and understand the local hydrology, especially when there appears to be multiple aquifers involved. If any of the wells have a tidal influence, there would clearly be no confidence in the historic groundwater data or represented flow directions.

7.3.6 Monitoring Well Surface Elevation Concerns

The surveyed well measuring point elevations for all six existing wells were compared to well depth and surveyed ground or monument surface elevations. The elevations were then compared to recent surveyed surface elevations presented in Figure 3-4 of the "Existing Site Conditions" in the Metroplex "Permit Application For The Type III Construction and Demolition Landfill (October 2003) Report." The surface elevations in Figure 3-4 of that report indicate that the monitor well surface and measuring point elevations could be in error by almost two feet. This discrepancy could significantly change the hydrologic representation and groundwater flow interpretation of up gradient or down gradient well locations, especially considering the expected relatively shallow slope of the local groundwater gradient.

The NISTAC team reviewed the following items to evaluate the Gentilly Landfill's installed engineering control systems:

- Completed Closure Design Project Manuals and Closure Certification Reports;
- Closure cap design considerations, assumptions and supporting calculations;
- Engineering considerations, assumptions, and calculations for the placement of new wastes on top of the pre-existing wastes and soils;
- Geotechnical characteristics of the soils used for completing the settlement and stability analysis calculations; and
- Design calculations prepared for the permits that estimate the quantity and flow rate for the "waters of consolidation" to be released from the Old Landfill wastes and the underlying soft clays from the overburden placed (NISTAC did not find calculations estimating either the total quantities or rate of production, in the documents reviewed).

In addition, the NISTAC team evaluated the possibility that the expedited placement of overburden on the pre-existing waste and underlying soils changes the total quantity of liquids released and/or the flow rate at which it is released (NISTAC did not find such calculations, in the documents reviewed).

8.1 SUMMARY OF PERMIT AND ENGINEERING DOCUMENT REVIEW

The following list summarizes the NISTAC's team review of Gentilly Landfill permits and engineering documents:

- EPA stated in its November 11, 2005 Memorandum to John Connolly of FEMA, that

  > "…The old landfill cap consists of three feet of compacted clay. This clay cap meets the new landfill bottom liner engineering design for RCRA Subtitle D Type III C&D landfills in Louisiana.";

- No engineering calculations or closure reports were found, in the files provided, to support the closure design and construction of the Old Landfill, Phases I, II, or III.
- The City of New Orleans struggled with funding the landfill closure from the day it commenced preparation of the first closure plan (submitted to the LDEQ in 1983) through the present (numerous correspondences between the LDEQ and City, taken from the LDEQ files). To raise capital to provide funds for closing the final 17 acres of the 203 acres in need of closure, the City obtained a permit for the new Class III C&D landfill.
- The Phase I Closure activities (1989) included the placement of a 0.5-feet thick layer of clay soils on top of all exposed waste (NISTAC found no documentation supporting the installation of this layer).
- The Phase II Closure activities (1997) included the placement of a 2-foot thick "compacted" clay cap and 6 inches of top soil placed on 43 acres.
- The Phase III Closure activities (2002) included placing up to a total of 1.5-feet of "compacted" clay cover over 143 acres. Any pre-existing clays or other soils already found overlying these 143 acres of waste were included as part of the 1.5 feet of clay cap.

- The Phase II & Phase III Certification Reports report and confirm, based on field inspections conducted after their respective caps were installed, that the caps were constructed to their respective design thicknesses.
- Both Phase II & Phase III caps were designed to be compacted to a qualitative compaction specification without regard to the type of clay soils used for the installation of the cap or the relative compaction effort required to reach a minimum soil density required to achieve a minimum permeability.
- Construction certification reports do not indicate that permeability testing of the clay soils was conducted as part of the closure design to confirm that a minimum permeability was reached in each cap placed. This is a current standard of practice, especially if this layer is to be used also as a liner for a subsequent landfill to be placed over it (a fact known when the Phase III cap was placed in 2002).
- The New Landfill permit package included calculations estimating how much the New Landfill would settle due to the placement of up to 130 feet of type C&D landfill wastes on top of the Old Landfill, humus and soft clays.
- The settlement calculations were prepared based on the assumption that 130 feet of type C&D landfill wastes are placed on top of: a 2-foot compacted clay cap, 8 feet of wastes, 8 feet of clay/humus, 12 feet of soft clays, and 85-feet of moderately stiff clays resulting in a maximum settlement estimate of almost 25 feet.
- This settlement evaluation concluded that the 25 feet of settlement would not negatively impact the viability of the clay cap. The evaluation report stated that the "…small strains, induced by settlement, will have no detrimental effect on the performance of the compacted clay cover."

8.2 EVALUATION OF CLOSURE CAP INSTALLATION AND NEW LANDFILL SETTLEMENT CALCULATIONS

A number of concerns were identified by the NISTAC team regarding the Old Landfill closure cap installation. Nowhere, in the NISTAC team's review of the documents, was it found that more than 2 feet of "compacted" clay (with an additional 6 inches of a vegetative soil) was placed on the Old Landfill. That thickness of cover was placed on 43 acres out of 203 acres. On 143 acres of the Old Landfill, only 1.5 feet of "compacted" clay was placed directly on loosely compacted waste, See **Figure 11**;

Typical Subtitle D required MSW landfill closure caps are much more substantial than the pre-Subtitle D closure cap placed on the Old Landfill. **Figure 12** includes a prescriptive (Subtitle D) closure cap design shown next to the closure cap design that covers 186 acres of the 203-acre landfill. It can be readily seen that the Old Landfill's closure cap is not nearly as protective as the prescriptive cap design.

Figure 11 Old Landfill: Phased Closure Plan

Figure 12 Closure Cap Comparison

It is understandable that at the time a non-Subtitle D closure cap was allowed to be installed over the Old Landfill. However, the installation of an unlined landfill that is designed to place as much as 130-feet of wastes directly on top of this minimally designed 1.5-foot to 2-foot thick closure cap without some supporting engineered fill soils or geogrid fabrics to add strength to the cap system is unusual and unexpected.

The following additional concerns regarding Old Landfill closure cap installation and New Landfill settlement calculations were also identified:

- The closure cap design specification included only a standard compactive effort requirement, for example requiring the contractor, utilizing a"…tamping roller in tandem, two to four complete passes over each 9 inch thick lift of soil will be required…" (Project Manual Gentilly Landfill Closure Phase III; Earthtech; May 1999) Current landfill closure cap standards of practice include developing (prior to construction) specific 90% to 95 % dry density soil compaction curves for each type (or source) of clay to be used in the cap and (during construction) a series of field density compaction tests to field verify that the required compaction was actually obtained.
- Typically, alternative closure and/or new landfill liner designs require backup documentation, calculations, etc to support the use of a non-standard design as equally and/or more protective than the prescriptive design(s). NISTAC has been unable to find such supporting documentation.
- Expected supporting calculations would likely include standard leachate generation calculations (comparing prescriptive and proposed cap/liner designs) demonstrating that the placement of additional wastes would not increase leachate generation and/or leachate releases from either landfill.
- Placing up to 130 feet of additional wastes on top of the landfill also adds to the tenuous nature of the barrier placed between the new and old landfills. It may have been more prudent to at least place a Subtitle D prescriptive closure cap on top of the Old Landfill, prior placing the New Landfill wastes over the Old Landfill footprint.
- No design documents, certification report, or other documentation was found to support this activity took place for the Phase I Closure Cap installation activities.
- The settlement analysis conducted and submitted as part of the New Landfill permit was thorough but was based on average waste, humus, and soft clay thicknesses. However, based on the landfill cross-section presented in Figure 2, a new typical cross-section should be considered using thicker, possible worst case thicknesses of both the waste and humus layers (18 feet and 15 feet, respectively). The results of this second analysis would indicate a worst-case settlement to compare with the average case settlement presented in the permit application. If the results of this analysis still shows that the "2-foot" thick cap should hold up to the stresses applied, general concerns for the cap's integrity can be mollified.
- Based on NISTAC's document review, especially the LDEQ's inspection letters, the refuse placed in the landfill was never to rarely compacted during or after placement in the landfill. This could contribute to the overall instability and an increase in the potential magnitude of settlement occurring under the New Landfill, based on using weaker strength assumptions for the waste mass.

- No evaluation was conducted to assess the possible unstable conditions on the soft clays by placing the permitted wastes on the Old Landfill at up to 10 times the disposal rate as originally allowed in the New Landfill permit.
- The magnitude of settlement expected, especially if the landfill is being constructed at a much higher rate than originally permitted could be problematic. The New Landfill waste placement operations should be thought out carefully to make sure that the wastes are spread out over the entire (or a large portion of the) footprint to minimize the potential significant differential settlement that could occur otherwise, potentially compromising the relatively thin closure cap underlying the wastes being placed.
- No calculations were included in the documents reviewed with respect to the Old Landfill closure or the New Landfill design that would account for quantifying the release of "waters of consolidation" from the settlement of up to 25 feet of saturated portions of the Old Landfill waste (leachate) and from the underlying very soft and saturated clays (groundwater).
- No consideration was given to where these "liquids of consolidation" would be released, either laterally outward from the Old Landfill waste mass and out from the clay soils or up through the old waste mass, up to, through and/or around the edges of the 1.5- to 2.0-foot clay cap.
- The silty sands underlying the Old Landfill's waste mass (as described previously in Section 7.2.2), may act as a conduit for the liquids of consolidation, providing any leachate emanating from the landfill a preferential pathway away from the landfill.
- Due to the extended construction schedule for completion of the closure cap on the landfill (LDEQ requested that the landfill be closed in 1983, but it continued receiving MSW through 1986; minimal closure cap of 0.5 feet of clay placed in 1989, 43 acres receiving a cap in 1997, 143 acres receiving a cap in 2002, and 17 acres still awaiting a closure cap); poor grading allowing for drainage (as seen in the contour map presented in the October, 2003 New Landfill permit application indicating many low spots within the landfill footprint); and many years of stormwater infiltration opportunities into the wastes placed above the high water table, it is likely that significant amount of leachate could have formed within the Old Landfill waste mass.
- The current groundwater monitoring system is not adequate to detect leachate that was likely generated over the intervening years.

Landfill slope stability analyses were submitted as part of the New Landfill permit application package (Attachment 9, Exhibit 1). Using common limit-equilibrium procedures, the analyses calculated slope stability factors of safety for critical cases of landfill geometry during operation and at closure. The analyses used soil profiles, strength parameters, and groundwater elevations (hydrostatic pressure heads) estimated from interpretation of the soil borings and laboratory testing results included in the MII Geotechnical Report (Attachment 8, Exhibits 1 and 2). The analysis results appeared to indicate acceptable numerical factors of safety for landfill slope stability.

However, the analyses used optimistic soil strength parameters and groundwater conditions for analysis of landfill operations. Therefore, critical failure surfaces and minimum factors of safety

during landfill operation were not identified. NISTAC's concerns about this analysis are based on a conservative interpretation of the boring logs and laboratory testing results in the MII Geotechnical Report along with relevant geotechnical information in the Eustis Engineering Geotechnical Report (Attachment 8, Exhibits 3) and the boring logs shown on construction plans for the hurricane protection levee immediately south of the landfill (US Corps of Engineers 1984).

In particular, both the Eustis report and the levee borings indicate that the humus and soft clay layers in the area of the landfill are likely to contain extensive zones of significantly less shear strength than used in the slope stability analyses. Also, the actual groundwater elevations in the Old Landfill, and the New Landfill during operations may be much higher than assumed in the slope stability analyses. A combination of weaker foundation soils and higher groundwater elevations would result in significantly less stabile slopes than indicated in the landfill slope stability analyses.

Very simply, there is a concern that relatively weak natural foundation soils underlying the Gentilly Landfill may be over-loaded by ongoing waste placement and become unstable. The instability could result in significant permanent lateral displacements of the waste body and affected foundation soil, both below and adjacent to the landfill. In particular, there is a potential that affected soils may include foundation soils below the MRGO levee and extend out as far as the MRGO canal face.

9.1 SUMMARY OF PERMIT DOCUMENT REVIEW REGARDING LANDFILL GAS PRODUCTION

The following summarizes the NISTAC team's document review regarding landfill gas production:

- During preparations to get the Gentilly landfill ready to receive hurricane debris, landfill gas (LFG) was detected at shallow depths within the footprint of an area anticipated to be used for open burning of wastes (EE&G Phase II Report, November 9, 2005);
- No landfill gas generation model reports were prepared to meet the requirements of EPA's New Source Performance Standards since the landfill ceased receiving wastes in 1986 (these regulations were effective for landfills that received wastes after November 8, 1987);
- No LFG calculations were performed to estimate the quantity of LFG that would be generated and need to be vented once the closure cap had been placed; and
- No LFG generation rate calculations were conducted to estimate if LFG vent pipes were necessary to relieve gas pressures that might build up under the New Landfill waste mass; and
- The site investigation included an analysis of soil gasses in the subsurface soils within a proposed waste incineration footprint, located on top of the Old Landfill, including the placement of 24 temporary soil gas probes.

9.2 EVALUATION OF POTENTIAL LANDFILL GAS ISSUES

The following issues were identified by the NISTAC team regarding landfill gas:

- The letter written by the consulting firm CDM to the LDEQ on the City's behalf regarding the NSPS Air Regulations - Gentilly Landfill, New Orleans (July 9, 1996) indicated that an estimated 2.4 million cubic yards of waste had been placed within the Old Landfill. This is a significant quantity of waste that can produce significant quantities of LFG that may be trapped under the cap and New Landfill waste mass, forcing LFG to migrate laterally under and around the closure cap and possibly off-site.
- There are no LFG monitoring probes located on-site, as would be expected around the Old Landfill especially now that the New Landfill has been permitted and placed on top of it.
- There were no LFG vents installed as part of the closure cap construction to allow for the release of LFG, thus trapping it under each installed cap and forcing them to vent around the edges of each closure cap installed, vent through cracks in the clay cap, or forcing these gasses to migrate beyond the landfill boundaries within the shallow unsaturated soils.
- There were no LFG vents designed to be placed within the Old Landfill's waste mass included within the New Landfill design or permit package. The New Landfill threatens to ensure the buildup of LFG pressures below the closure cap forcing the gasses to find a path of least resistance to relieve the pressure (i.e. around the perimeter of the new waste footprint, through cracks in or around the edges of the clay cap), if no other means of ventilation is provided.

- The EG&G Phase II Investigation found, "Flammable vapor measurements exceeded 100% of the LEL (lower explosive limit for methane gas) in 15 of the 16 vapor points on October 8, 2005. OVA/FID (organic vapor analyzer and Flame ionization detector) measurements could not be recorded, as the flame was extinguished consistently when measurements were attempted, due to the elevated concentration of methane and the corresponding lack of oxygen. Although direct measurements of methane could not be obtained with the OVA/FID, the elevated LEL readings and extinguishing of the OVA/FID flame indicated significantly elevated methane concentrations in soil vapor."

These gasses should be control vented, per the standards of practice for landfills operating under similar conditions (i.e. new landfills operating over capped older landfills), to relieve their pent-up gas pressures and prevent potentially unsafe working conditions for the New Landfill disposal operators, customers and others using the site;

- LFG is composed of 50% or more of methane gas, close to 50 % carbon dioxide, and the remaining gasses are typically volatile organic gasses that come directly from materials that make up the waste mass placed in the landfill. LFG can and does act as a carrier gas for these volatile gasses transporting them into the air and laterally through the non-saturated soils and contaminating groundwater with these volatile gasses.

Based on the data review and preliminary evaluation, NISTAC concludes that there are a number of issues of concern with respect to the landfill's protective systems designs and their construction as well as with the current groundwater monitoring system.

The current detection wells were installed in a manner that may not detect leakage and contamination associated with the Old Landfill. The well data do not represent the quality of groundwater passing the relevant point of compliance. An adequate number of wells were not installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer and no determination was ever made to assess if the lower aquifer is hydraulically interconnected with the upper aquifer within the facility's boundary.

The following list includes the main conclusions that NISTAC has reached based our evaluation of the documents and based on our site visit:

- Insufficient number of wells
- Wells not installed at appropriate locations
- There is no site-specific technical characterization data
- Possible inaccurate well elevations
- Wells not screened adequately
- Groundwater not analyzed for full Appendix I Detection Monitoring Analytes
- No Groundwater Sampling and Analysis Plan exits for the site
- City of New Orleans has proposed plugging the existing groundwater wells

With respect to the landfill design and construction, NISTAC concludes the following items are in question:

- The viability of the roughly compacted 2-foot thick closure cap under the anticipated loads;
- The release/production of leachate from the waters released during the anticipated 25-feet of settlement;
- The leachate generated during the very elongated closure cap installation;
- The relative instability of the soils supporting both the Old Landfill and the New Landfill waste mass could result in significant permanent lateral displacements both below and adjacent to the landfill. In particular, there is a potential that affected soils may include foundation soils below the MRGO levee and extend out as far as the MRGO canal face; and
- The venting of landfill gasses from under the closure cap has not been accounted for potentially producing unsafe conditions at the site.

Additional data are needed to develop a more complete groundwater monitoring program that can be used to adequately evaluate the environmental liability issues for this property. Additional data also needs to be obtained and/or calculated to better understand how well the environment is being protected by the man-made systems installed for the landfill. The following paragraphs list the necessary data and how they might be obtained.

As noted previously in this Report, the current groundwater monitoring system and analytical data analyzed for the Old Gentilly Landfill were based on 1980's EPA and LDEQ regulations and requirements, which is reasonable and understandable. However, since the new Type III C&D will include placement of up to 130 feet of waste on top of the old Type II landfill, the most prudent and reasonably conservative groundwater well installation and data evaluation requirements should be applied to the New Landfill operation for protection of the local environment. The requirements are provided in the current LDEQ regulations in Subchapter B §709, Standards Governing All Solid Waste Disposal Facilities (Type I and II). Specifically Sub-section E "Groundwater Monitoring," might be considered. This sub-section includes characterization guidelines and assessment procedures, and addresses Detection Monitoring Parameters or Constituents.

To characterize the subsurface soils and groundwater conditions, the following items are recommended:

1) Additional Geotechnical and Hydrogeologic Characterization should be conducted on the Old Landfill. This can be conducted by advancing an adequate number of geotechnical boreholes to address LDEQ-required representative spacing, depths, sampling, and geotechnical field and laboratory tests according to industry standards.

2) A representative groundwater monitoring system should be installed at the Landfill. The installation of a groundwater monitoring system that can adequately define and detect contamination at the site would consist of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer and any underlying hydraulically connected water-bearing permeable zone that can yield sufficient quantities of water for sampling. The wells should be located and installed to represent background groundwater quality that has not been affected by a release or leakage from the landfill, and represent the quality of groundwater passing the relevant point of compliance. Such a program should be prepared to meet the federal, Louisiana, and industry accepted standards of practice.

3) A Groundwater Sampling and Analysis Plan (SAP) should be prepared and implemented. This SAP should meet the standards of practice and the LDEQ's current requirements for sample collection, preservation, shipment, chain of custody, quality-assurance/quality-control, and statistical evaluation.

4) A Detection Monitoring Program (DMP) should be prepared and implemented. A DMP should be prepared and implemented to meet the standards of practice and would initially include all the parameters or constituents listed in LAC 33: VII.3005 Table 1.

To further characterize and estimate the possible impacts on the environment from placing new wastes over the Old Landfill and its clay cap, the following items are recommended to be implemented:

5) Evaluate the leachate generation potential from both landfills under current design conditions. The intent of these calculations is to demonstrate that the placement of additional wastes would not increase leachate generation from the Old Landfill and to determine the quantities of leachate that can be generated from the New Landfill, considering the permitted operating parameters. There should also be an evaluation regarding the effects of tidal influences on leachate releases from the Old Landfill.

6) Evaluate new C&D landfill's waste disposal plan. The plan should be reviewed to make sure that it is thorough enough to minimize the potential for differential settlement that could compromise the Old Landfill's closure cap.

7) Run a revised "worst case" settlement analysis for the New Landfill to evaluate closure cap integrity. Run the analysis for the thickest cross-sections of waste, humus, and soft clay layers to estimate if the strains induced in the clay cap, under these conditions would damage the integrity of the cap.

8) Run preliminary calculations to estimate the quantity of "waters of consolidation" released during C&D waste disposal operations. This should be done to estimate if the quantities produced and potentially released under the Old Landfill's closure cap could be enough to cause negative environmental impacts.

9) Run slope stability analyses for the New Landfill fill slopes. This analysis should include more conservative assumptions, including: maximum humus and old landfill soil layer thicknesses, utilizing more representative (weaker) soil shear strengths, and the consider the actual higher groundwater elevation.

10) A landfill gas monitoring system should be installed and monitored. A system of perimeter LFG monitoring probes should be designed, installed, and monitored to the standards of practice, to determine if LFG is migrating off-site (emanating from either the new or the Old Landfill waste masses). These probes are typically be spaced at 1,000 foot centers around the entire perimeter of the landfill footprint, and screened to the depth of waste placed, or to the top of groundwater.

11) Run landfill gas generation calculations. These calculations should be conducted using standard generation models, based on available waste disposal data, to estimate and bracket the probable high and low gas flows currently being generated from the Old Landfill waste mass. Use this information as supporting information for the design and installation of landfill gas ventilation vents under the Old Landfill closure cap. Evaluate the potential tidal impact on compressing (pressurizing) the generated gasses during high tide events and potential for health and safety issues.

12) Collect landfill gas samples and analyze for volatile gas compounds. This information would be helpful to augment any groundwater sampling and analyses conducted (many of the volatile compounds found in the LFG are soluble and will likely be transmitted directly to the groundwater).

13) Conduct a levee evaluation to estimate if the adjacent Gulf Intercoastal Waterway Levee is protective of the facility against the 100-year flood to prevent the washout of solid waste, per regulatory requirements. Perimeter levees are required to protect the facility against the 100-year flood and are required to be engineered to minimize wind and water erosion. They should have a protective cover to preserve structural integrity and should provide adequate freeboard above the 100-year flood elevation. It is understood that the Gulf Intercoastal Waterway Levee will likely be undergoing a separate and parallel evaluation for stability and armoring as part of a separate study being conduction by the Army Corp of Engineers.

The following terms used in this report are based on LDEQ Title 33, Part VII, Subpart 1, Chapter 1. General Provisions and Definitions:

Aquifer—a formation, group of formations, or part of a formation that contains enough saturated permeable materials to yield significant quantities of water to wells or springs.

Areas Susceptible to Mass Movement—those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the facility, because of natural or man-induced events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall.

Closure—the act of securing a facility that has been used to process, store, or dispose of solid waste in a manner that minimizes harm to the public and the environment.

Closure Plan—a plan for closure and/or post-closure of a facility prepared in accordance with the requirements of LAC 33:VII Subpart 1.

Coastal Zone—the coastal waters and adjacent shorelands within the boundaries of the *coastal zone* established by the State and Local Coastal Resources Management Act of 1978 (R.S. 49:213.1-213.21).

Commercial Solid Waste—all types of solid waste generated by stores, offices, restaurants, warehouses, and other non-manufacturing activities, excluding residential and industrial solid wastes.

Construction/Demolition Debris—nonhazardous waste generally considered not water-soluble, including but not limited to metal, concrete, brick, asphalt, roofing materials (shingles, sheet rock, plaster), or lumber from a construction or demolition project, but excluding asbestos-contaminated waste, white goods, furniture, trash, or treated lumber. The admixture of construction and demolition debris with more than five percent by volume of paper associated with such debris or any other type of solid waste (excluding wood waste or yard trash) will cause it to be classified as other than construction/demolition debris.

Contamination (Environmental)—the degradation of naturally occurring water, air, or soil quality either directly or indirectly as a result of human activities.

Contamination (Solid Waste)—the admixture of any solid waste with any amount of hazardous waste, or any other type of waste not meeting the definition of solid waste.

Cover Material—soil, or other suitable material approved by the administrative authority, applied on the top and side slopes of disposed solid waste to control vectors, gases, erosion, fires, and infiltration of precipitation; to support vegetation; to provide trafficability; or to ensure an aesthetic appearance.

Daily Cover—cover material applied at the end of the operating day to a unit, the working face of a unit, or a facility. (If earthen, cover will consist of a minimum of 6 inches of cover material).

Facility—actual land and associated appurtenances used for storage, processing, and/or disposal of solid wastes, but possibly consisting of one or more units. (Any earthen ditches leading to or from a unit of a facility and that receive solid waste are considered part of the *facility* to which they connect, except for ditches lined with materials capable of preventing groundwater contamination. The term *facility* does not necessarily mean an entire industrial manufacturing plant.).

Flood Plain—the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, that are inundated by the 100-year flood.

Garbage—solid waste that includes animal and vegetable matter from the handling, preparation, cooking, and serving of foods, but that does not include industrial solid waste.

Generator—any person whose act or process produces solid waste as defined in these regulations.

Geotechnical Borehole—an exploratory borehole drilled, augered, bored, or cored to obtain soil samples to be analyzed for chemical and/or physical properties.

Groundwater—water below the land surface in the zone of saturation.

Hazardous Waste—waste identified as hazardous in the current Louisiana Hazardous Waste Regulations (LAC 33: Part V) and/or by the federal government under the Resource Conservation and Recovery Act and subsequent amendments.

Holocene—the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present.

Industrial Solid Waste—solid waste generated by a manufacturing, industrial, or mining process, or which is contaminated by solid waste generated by such a process. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products; by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; and transportation equipment. This term does not include hazardous waste regulated under the Louisiana hazardous waste regulations or under federal law, or waste which is subject to regulation under the Office of Conservation's Statewide Order No. 29-B or by other agencies.

Industrial Solid Waste Facility—a facility for the processing, storage, and/or disposal of industrial solid waste. *Interim Compacted Cover*—a minimum of 2 feet of compacted silty or sandy clay.

Interim Cover—a minimum of 1 foot of soil that is applied to a portion of a unit or a facility.

Leachate—a liquid that has passed through or emerged from solid waste and may contain soluble, suspended, or miscible materials removed from such wastes.

Leak-Detection Well—a well used to determine the escape of liquids from a permitted solid waste facility.

Lower-Explosive Limit—the lowest percent by volume of a mixture of explosive gases in the air that will propagate a flame at 25 degrees centigrade and atmospheric pressure.

Monitoring Well—a well used to obtain hydraulic and/or water-quality data and to satisfy regulatory requirements for groundwater monitoring at regulated units, usually installed at or near a known or potential source of groundwater contamination.

Municipal Solid Waste Landfill or *MSW Landfill*—an entire disposal facility in a contiguous geographical space where residential solid waste or commercial solid waste is placed in or on land.

Open Dump—a solid waste processing or disposal facility which has been issued a temporary permit and may not comply with the standards set by these regulations.

Permit—a written authorization issued by the administrative authority to a person for the construction, installation, modification, operation, closure, or post-closure of a certain facility used or intended to be used to process or dispose of solid waste in accordance with the act, these regulations, and specified terms and conditions.

Sewage Sludge—sludge resulting from treatment of wastewater from publicly or privately owned or operated sewage-treatment plants.

Solid Waste—any garbage, refuse, or sludge from a wastewater-treatment plant, water-supply treatment plant, or air pollution-control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. *Solid waste* does not include solid or dissolved material in domestic sewage; solid or dissolved materials in irrigation-return flows; industrial discharges that are point sources subject to permits under R.S. 30:2075; source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954 (68 Stat. 923 et seq.), as amended; or hazardous waste subject to permits under R.S. 30:2171 et seq.

Solid Waste Management System—the entire process of collection, transportation, storage, processing, and disposal of solid waste by any person engaged in such process as a business or by any municipality, authority, trust, parish, or any combination thereof.

Trash—nonputrescible refuse including white goods, furniture, and wood and metal goods.

Type (of Waste)—a category of waste in a general classification defined for solid waste management purposes (e.g., commercial, industrial, residential).

Type I Facility—a facility used for disposing of industrial solid wastes. (If the facility is also used for disposing of residential or commercial solid waste, it is also a Type II facility.).

Type I-A Facility—a facility used for processing industrial solid waste (e.g., transfer station, incinerator waste-handling facility, shredder, baler, or compactor). (If the facility is also used for processing residential or commercial solid waste, it is also a Type II-A facility.).

Type II Facility—a facility used for disposing of residential or commercial solid waste. (If the facility also is used for disposing of industrial solid waste, it is also a Type I facility.).

Type II-A Facility—a facility used for processing residential, infectious, or commercial solid waste (e.g., transfer station, incinerator waste-handling facility, refuse-derived fuel facility, shredder, baler, autoclave, or compactor). (If the facility is also used for processing industrial solid waste, it is also a Type I-A facility.).

Type III Facility—a facility used for disposing or processing of construction/demolition debris or wood waste, composting organic waste to produce a usable material, or separating recyclable wastes (a separation facility). Residential, commercial, or industrial solid waste must not be disposed of in a Ty*pe III facility*.

Unstable Area—a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. *Unstable areas* can include poor foundation conditions, areas susceptible to mass movement, and Karst terranes.

Uppermost Aquifer—the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

Water Table—the upper surface of the zone of saturation at which the pressure is equal to the atmospheric pressure.

COCs	chemical(s) of concern
DMP	detection monitoring program
DNAPL	dense non-aqueous phase liquid
DRO	diesel-range organics
EEC	Eustis Engineering Company
EE&G	EE&G Restoration, LLC.
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
LDEQ	Louisiana Department of Environmental Quality
LEL	lower explosive limit for methane gas
LFG	landfill gas
LNAPL	liquid non-aqueous phase liquid
MRGO	Mississippi River Gulf Outlet
MSL	mean sea level
MSW	municipal solid waste
MSWLF	municipal solid waste landfill
NISTAC	National Infrastructure Support Technical Assistance Consultants
ORO	oil-range organics
OVA/FID	organic vapor analyzer and flame ionization detector
PCB	polychlorinated biphenyl
REC	recognized environmental condition
RECAP	Risk Evaluation Corrective Action Program
SAP	Sampling and Analysis Plan
TPH	total petroleum hydrocarbon
USGS	United States Geological Survey

Robert Healy, P.E. is a Senior Project Manager/Engineer with over 26 years of experience in the field of solid waste management all along the West Coast and throughout the US. Mr. Healy is registered as a professional engineer in the states of California, Washington, Oregon, Arizona, New Mexico, and CNMI (Saipan). Mr. Healy also has a very broad background in solid waste facility siting/ permitting; landfill liner and closure designs; and landfill operations. Bob has been involved in permitting, design, and/or operations projects at over 50 landfills, nationwide.

Mr. Healy's strengths also include detailed design, permitting, construction, operation, monitoring, and maintenance of landfill gas collection systems. Mr. Healy has also prepared numerous landfill gas (LFG) remediation system designs for existing, former, and closed landfill sites, throughout the Country.

Mr. Healy is an active member of the Solid Waste Association of North America (SWANA). He is an active member of the following SWANA groups and committees: Landfill Design Group, Landfill Gas Group, Landfill Gas Systems Operations Manual Update Committee, and the Bioreactor Landfill Committee.

Mr. Healy has a BS in Civil Engineering at Loyola Marymount University, Los Angeles, California and an MS in Environmental Engineering for the University of California at Davis.

Philip Cavendor is a Senior Project Manager / Environmental Hydrogeologist with over 27 years of professional experience with environmental investigation, remediation, first responder, geotechnical, and energy industry experience. He achieved a BS in Geology and an MS in Hydrogeochemistry from the University of Arkansas. His environmental experience involves being a former Hazardous Waste Enforcement Regulator and First Responder for the State of Minnesota, and has been project manager at Comprehensive Environmental Response Compensation, and Liability Act (CERCLA), Toxic Substances Control Act (TSCA) remediation projects, and Resource Conservation and Recovery Act (RCRA) sites.

His consulting project management experience includes management of Environmental Restoration (ER), Department of Defense (DOD), Department of Energy (DOE), RCRA facility investigations (RFIs). He has conducted numerous soil and groundwater, remedial actions, and demolition work at hundreds of industrial and commercial sites throughout the United States, including RCRA municipal solid waste landfill and hazardous waste landfill investigations and closures, refineries, railyards, and CERCLA pesticide, herbicide, and solvent impact sites. He also has experience at aerial photo and satellite imagery interpretation, and has been an environmental and oil industry professional witness.

Chuck Vita, PhD, PE, GE. Dr. Vita is a registered civil and geotechnical engineer with over 32 years of environmental and geotechnical experience. He has conducted engineering analyses and evaluations of the containment performance of major landfills in Louisiana, Ohio, and Washington. He was principal investigator on a major study for EPA's Risk Reduction Laboratory to develop reliability-based evaluation methodology for RCRA landfill liner performance. His expertise includes analysis and evaluation of geotechnical site stability and chemical fate and transport in groundwater and surface water.

Dr. Vita is especially skilled in the analysis and evaluation of uncertainty, including probability based site characterization and engineering performance analyses. He is noted for rigorous conceptual and statistical data analysis and interpretation, including design and evaluation of exploration, testing, and monitoring programs.

Dr. Vita has a BS in Civil Engineering (with Highest Honors and Civil Engineering Departmental Citation) and a MS in Geotechnical Engineering, both from the University of California, Berkeley. His PhD in Civil Engineering from the University of Washington focused on geotechnical systems.

Beth A. Keister, PE, is A Senior Project Manager responsible for the marketing, management, and engineering design of solid waste and water resources-related projects in both the public and private sectors. In the last 22 years, she has provided project management and civil engineering professional services for over 200 projects in the United States, its territories, Europe, and Southeast Asia. Ms. Keister has specialized expertise in project management and quality management, including landfill liner construction quality assurance. She has taken several projects through all phases from planning and permitting, to design and construction engineering.

Ms. Keister has a BS in Civil Engineering from Iowa State University. Ms. Keister is an active member of the following professional groups and societies: American Society of Civil Engineers, American Society of Testing Materials, Consulting Engineers Council of Minnesota, North American Geosynthetics Society, Solid Waste Management Association of North America, and the Society of American Military Engineers.

Appendix A

List of Historic Documents

Appendix B
Regulatory History

Appendix C
Figures

Doc ID	Content	Reference	Doc Type	SubDoc Type	Date	Description	Media	Division	TEMPO Activity#	Pgs
10684643	LDEQ Ltr to CONO		Correspondence-Received		11/20/1991		Solid Waste			1
10738939	Gentilly Landfill Fact Sheet - History	Fact Sheet	Permits		2/10/1982	2	Solid Waste			13
10972077	Landfill Closure Map - Attachment 1	Map	Permits		11/1/1995	CLOSURE	Solid Waste	Permits		1
10972078	Landfill Cap thickness Map - Attachment 1	Map	Permits		6/16/1998		Solid Waste			1
10972079	Landfill Cap thickness Map - Attachment 1	Map	Permits		6/16/1998		Solid Waste			1
10972080	Landfill Cap thickness Map - Attachment 1	Map	Permits		6/16/1998		Solid Waste			1
10972167	Landfill Cap thickness Map - Attachment 1	Map	Reports		7/21/1998		Solid Waste			1
10972168	Landfill Cap thickness Map - Attachment 1	Map	Permits		11/1/1995		Solid Waste			1
10972169	Landfill Cap thickness Map - Attachment 1	Map	Permits		11/1/1995	CLOSURE	Solid Waste	Permits		1
10972170	Landfill Cap thickness Map - Attachment 1	Map	Permits		11/1/1995	CLOSURE	Solid Waste	Permits		1
10972171	Landfill Cap thickness Map - Attachment 1	Map	Reports		7/21/1998		Solid Waste			1
10972172	Landfill Cap thickness Map - Attachment 1	Map	Permits		11/1/1995	CLOSURE	Solid Waste	Permits		1
10972173	Landfill Cap thickness Map - Attachment 1	Map	Permits		6/14/1981		Solid Waste			1
1179575	General Inspection/Sample Event	Groundwater	Reports	Inspection	12/18/1998		Ground Water			1
1179576	Semi-Annual Sample Event	Groundwater	Reports	Inspection	12/9/1998		Ground Water			1
1179577	General Inspection/Abandon MW-6	Groundwater	Reports	Inspection	7/19/1995		Ground Water			2
1179579	GWPD Memo of facility closure	Geology	Correspondence-Sent		5/1/1995		Ground Water			1
1179580	SOW to Abandon MW-6	Groundwater	Plans		4/24/1995		Ground Water			5
1179585	General Inspection/Abandon MW-6	Groundwater	Inspection Document	Inspection	2/1/1995		Ground Water			3

1179588	General Inspection/Abandon MW-6	Groundwater	Inspection Document	Inspection	2/1/1995		Ground Water			7
1179595	Semi-Annual Sample Event	Groundwater	Reports	Inspection	6/30/1993		Ground Water			3
1179598	Semi-Annual Sample Event - Last Sample Event on 8/90	Groundwater	Reports	Inspection	6/17/1992		Ground Water			3
1179601	Semi-Annual Sample Event - Last Sample Event on 8/90	Groundwater	Reports	Inspection	3/25/1991		Ground Water			1
1179602	LDEQ Noites GW well Problems at Facility	Groundwater	Correspondence-Internal	Note/Memo	5/8/1992		Ground Water			23
1179625	Response to EPA questions in Draft RFI	Facility - RFI Report	Correspondence-Received	Letter Response	3/10/1995		Ground Water			2
1179627	Monitoring well analysis report	Groundwater	Reports	Report	8/1/1989	Monitoring Well Analysis	Ground Water			2
1179629	Environmental Management, Inc. Monitoring well analysis report	7/89 Groundwater Sampling	Reports	Report	8/1/1989	Monitoring Well Analysis	Ground Water			2
1179631	Monitoring well analytical results in 1179629	Groundwater	Reports	Report	7/12/1989	Sample Report	Ground Water			6
1179637	Monitoring well analytical results in 1179629	same as above	same as above	same as above	7/12/1989	Sample Report	Ground Water			6
1179643	Closure Plan Revision - Cover page and TOC only		Plans		11/3/1987	Report	Ground Water			2
1179645	Closure Plan Revision - Cover page and TOC only	same as above	same as above	same as above	5/1/1987		Ground Water			2
1182615	Closure Plan Revision - Cover page only		Plans		5/1/1987	COVER	Ground Water			1
1182616	Closure Plan Revision - TOC only		Plans		5/1/1987	TABLE OF CONTENTS	Ground Water			1
1182617	Closure Plan Revision - Introduction only		Plans		5/1/1987	SECTION 1	Ground Water			1
1182618	Closure Plan Revision has description of monitoring well program and history 23 pgs		Plans		5/1/1987	PARTITION 1	Ground Water			23
1182725	Monitoring well analysis report cover		Reports		8/1/1989	Cover	Ground Water			1
1182726	Monitoring well analysis report TOC		Reports		8/1/1989	Table of Contents	Ground Water			1
1182727	Monitoring well analysis report Pgs 1 - 4		Reports		8/1/1989	Section 1	Ground Water			4

1182731	Monitoring well analysis report Appendix A 5 pgs - water and well data all wells 24.5' deep	Groundwater	Reports		8/1/1989	Appendix A	Ground Water			5
1182736	Monitoring well analysis report Appendix B - Analytical Report		Reports		8/1/1989	Appendix B	Ground Water			18
1182754	Monitoring well analysis report Appendix C		Reports		8/14/1989	Appendix C	Ground Water			3
1182757	Monitoring well analysis report Appendix D - Field Parameter Form		Reports		8/1/1989	Appendix D	Ground Water			7
1182764	Monitoring well analysis report Appendix E - COCs		Reports		8/1/1989	Appendix E	Ground Water			11
1182775	Monitoring well analysis report Appendix F - QA		Reports		8/1/1989	Appendix F	Ground Water			3
1182812	Encotec Response to EPA comments on Monitoring Report		Reports		3/10/1992	Cover Letter	Ground Water			3
1182815	Report Cover		Reports		7/18/1989	Partition 1	Ground Water			1
1182816	Monitoring well analysis report TOC		Reports		3/10/1989	Table of Contents	Ground Water			1
1182817	Monitoring well analysis report - Page 12&3		Reports		3/10/1989	Section 1	Ground Water			3
1182820	Lab Testing Cert		Reports		3/10/1989	Appendix A	Ground Water			2
1182822	PVC Cert		Reports		3/10/1989	Appendix B	Ground Water			2
1182824	Container preservation cert		Reports		3/10/1989	Appendix C	Ground Water			3
1182827	Field Parameter forms		Reports		3/10/1989	Appendix D	Ground Water			7
1182834	COCs		Reports		3/10/1989	Appendix E	Ground Water			11
1182845	QA analytical		Reports		3/10/1989	Appendix F	Ground Water			3
1182848	Analytical report		Reports		3/10/1989	Appendix G	Ground Water			17
1182865	Well Data		Reports		3/10/1989	Appendix H	Ground Water			3
1182868	Boring Logs		Reports		3/10/1989	Appendix I	Ground Water			7
1182875	Well Data		Reports		3/10/1989	Appendix J	Ground Water			7
1182882	Well Registration Forms		Reports		3/10/1989	Appendix K	Ground Water			7

1182890	Closure Plan Revision		Plans		10/1/1987	COVER	Ground Water			1
1182891	Closure Plan Revision		Plans		10/1/1987	TABLE OF CONTENTS	Ground Water			1
1182892	Closure Plan Revision -First Amendment		Plans		10/1/1987	SECTION 1	Ground Water			24
1182916	Closure Plan Revision	LDEQ Letter Response 9/22/1987	Plans		10/1/1987	APPENDIX	Ground Water			10
1182927	Outstanding Balance Notice		Financial	Invoice	5/18/1989		Ground Water			2
12655331	Bar-Coded Reference Sheets		Reports	Reference Materials	5/1/1999	Maps	Solid Waste			7
14716726	Aerial Photo of 1987 Landfill		Plans		10/1/1987	APPENDIX	Ground Water			1
14968346	Boring and Landfill Photos		Permits		6/16/1998		Solid Waste			29
14968395	Boring and Landfill Photos		Permits		6/16/1998		Solid Waste			29
14968464	Boring and Landfill Photos		Permits		6/16/1998		Solid Waste			29
14970174	3 Boring and Landfill Photos		Reports		2/19/1998		Solid Waste			3
15275199	Aerial Photo of 1987 Landfill		Plans		10/1/1987	APPENDIX	Ground Water			1
15761847	RUST design components		Reports	Reference Materials	5/1/1999	Maps	Solid Waste			1
17478685	CDM Semi-Annual Monitoring Report	semi 1/01	Reports		1/1/2001	SEMI ANNUAL MTR RP	Solid Waste			66
18451275	Photos from UST removal		Reports		1/25/1999	CLOSURE	Inactive & Abandoned Sites			1
18451276	Photos from UST removal		Reports		1/25/1999	CLOSURE	Inactive & Abandoned Sites			1
19203743	Not Received for review		Correspondence-Received		4/4/2001		Solid Waste	Financial Services		1
19541873	landfill location map		Reports		6/1/1997	SITE INSPECTION	Inactive & Abandoned Sites			1
19541874	Landfil site sketch		Reports		6/1/1997	SITE INSPECTION	Inactive & Abandoned Sites			1
19541875	groundwater, surface water and soil sampling locations		Reports		6/1/1997	SITE INSPECTION	Inactive & Abandoned Sites			1
19541876	Not Received for review		Reports		6/1/1997	SITE INSPECTION	Inactive & Abandoned Sites			1
19541877	Not Received for review		Reports		6/1/1997	SITE INSPECTION	Inactive & Abandoned Sites			1

19541878	Not Received for review		Reports		6/1/1997	SITE INSPECTION	Inactive & Abandoned Sites			1
19541899	site photos		Reports		6/1/1997	SITE INSPECTION	Inactive & Abandoned Sites			4
19541903	GW Well Photos		Reports		6/1/1997	SITE INSPECTION	Inactive & Abandoned Sites			4
19541907	GW Well Sampling Photos		Reports		6/1/1997	SITE INSPECTION	Inactive & Abandoned Sites			4
19541921	GW Well Photo		Reports		6/1/1997	SITE INSPECTION	Inactive & Abandoned Sites			1
1958378	EPA notification to BFI as potential haz wate site		Compliance	Notice	3/23/1982		Inactive & Abandoned Sites			3
1958381	EPA notice for BFI site log		Forms		4/1/1982		Inactive & Abandoned Sites			1
19658782	landfill location map Montgomery Watson		Reports		3/1/1995	GW MONITORING	Solid Waste			1
19841972	CDM Groundwater Monitoring Report - July 2001	semi 7/02	Reports		7/1/2001	SEMIANNUAL MONITORIING	Solid Waste	Environmental Technology		64
20862618	Field Interview Sheet to approve only 1 foot of cover instead of 2		Reports	Inspection	9/25/2001		Solid Waste	Surveillance		2
2100857	Martin Marietta Ship Request		Correspondence-Received		9/13/1984		Inactive & Abandoned Sites			2
2101658	Site Inspection Report (E&E)		Reports		6/1/1997	Site Inspection	Inactive & Abandoned Sites			65
2101744	Letter of Recission for NFA		Correspondence-Sent		4/8/1996		Inactive & Abandoned Sites			1
2101745	E&E Letter to LDEQ for field investigations		Correspondence-Received		6/25/1996		Inactive & Abandoned Sites			2
2101747	LDEQ Ltr to NO of sample collection notice during RFI		Correspondence-Sent		7/22/1996		Inactive & Abandoned Sites			3
2101750	LDEQ Ltr to NO for notice of possible CERCLA Ranking		Reports		9/17/1997	Sample Results	Inactive & Abandoned Sites			2
2101752	EPA ltr to LDEQ / Approval of Gentilly Site Inspection Report #00366		Correspondence-Received		7/21/1997		Inactive & Abandoned Sites			1

2101753	LDEQ ltr to E&E for changes and corrections to inspection report.		Correspondence-Sent		1/29/1997		Inactive & Abandoned Sites			1
2101754	E&E Letter to LDEQ notice for landfill inspectons		Correspondence-Received		8/1/1995		Inactive & Abandoned Sites			2
2101756	E&E Letter to LDEQ for amendment to wp AGENDA FOR SITE INSPECTIONS		Plans		8/26/1996		Inactive & Abandoned Sites			1
2101757	E&E Letter to LDEQ giving notice of surface water sample location discrepencies.		Correspondence-Received		8/23/1996		Inactive & Abandoned Sites			1
2101758	Memo		Correspondence-Internal	Note/Memo	3/6/1996		Inactive & Abandoned Sites			1
2101759	LDEQ ltr to Lon Biasxo w/ EPA - draft inspection report		Correspondence-Sent		12/12/1996		Inactive & Abandoned Sites			2
2101761	EPA SA/SI report		Reports		7/10/1980	Assessment	Inactive & Abandoned Sites			6
2101767	EPA Haz waste Site Log		Forms		4/1/1982		Inactive & Abandoned Sites			1
2101768	EPA Potential Haz Waste Site ID form		Forms		3/23/1982		Inactive & Abandoned Sites			1
2101769	EPA Notification of Haz Waste Site form filled out by BFI		Compliance	Notice	6/9/1981		Inactive & Abandoned Sites			2
2101771	EPA document requesting duplicates and negatives for photos		Correspondence-Received		12/12/1980		Inactive & Abandoned Sites			1
2101772	EPA inspection results show no problems with waste or groundwater		Forms		12/1/1980		Inactive & Abandoned Sites			2
2101774	EPA inspection results show no problems with waste or groundwater		Reports	Inspection	12/1/1980		Inactive & Abandoned Sites			2
2101776	EPA SI Report results and photos		Reports		11/17/1980	Site Inspection	Inactive & Abandoned Sites			19
2102145	LDEQ Site Inspection Report - Ref 1 to 19 including Wellhead Protection Listing		Reports		12/1/1996	Site Inspection	Inactive & Abandoned Sites			8

2102153	Ref 1 to 19 to LDEQ Site Inspection Report		Compliance	Notice	12/1/1996		Inactive & Abandoned Sites			327
21224745	Marine soils aerial map		Compliance	Notice	12/1/1996		Inactive & Abandoned Sites			1
21224746	Soils Map New Orleans		Compliance	Notice	12/1/1996		Inactive & Abandoned Sites			1
21224790	Little Woods Quad Topo Map New Orleans		Compliance	Notice	12/1/1996		Inactive & Abandoned Sites			1
21224791	Quad Topo Map New Orleans		Compliance	Notice	12/1/1996		Inactive & Abandoned Sites			1
21359773	Mongomery Watson Interim Cover Map		Permits		7/21/1998		Solid Waste			1
21359774	Mongomery Watson Interim Cover Map Attachment 1		Permits		2/1/1998	CLOSURE PLAN	Solid Waste	Permits		1
21359775	Burke & Associates Aerial Photo Closure Phase Map		Permits		10/1/1987	CLOSURE	Solid Waste	Permits		1
21359776	Preliminary Burke & Associates Aerial Photo Closure Phase Map		Reports	Reference Materials	5/1/1987	Maps	Solid Waste			1
21359777	Mongomery Watson Interim Cover Map Attachment 1		Permits		11/1/1996	CLOSURE	Solid Waste	Permits		1
22436700	3/22/02 Meeting Signitaries		Correspondence-Internal	Meeting	3/22/2002		Solid Waste	Permits		1
22675794	Metroplex Docs - proposed Type III Landfill		Correspondence-Received		6/13/2002		Solid Waste	Permits		5
22675829	Type III Landfill - Public Notice		Legal		6/24/2002		Solid Waste	Permits		2
22687910	Metroplex Docs - proposed Type III Landfill Permit Application		Permits		6/21/2002		Solid Waste	Permits		2
22688062	Metroplex Docs - proposed Type III Landfill Permit Application Document		Permits		6/1/2002	permit application	Solid Waste	Permits		756
22689677	USF&WS LTR - No endangered species		Correspondence-Received		6/19/2002		Solid Waste	Permits		1
23057976	LDEQ Memo for Permit Aplication.		Correspondence-Internal	Note/Memo	6/19/2002		Solid Waste	Permits		1
23363834	Earth Tech Phase III Closure Cert Doc		Legal		7/23/2002		Solid Waste	Permits		3

23448741	LDEQ Field Interview Form		Reports	Inspection	8/16/2002		Ground Water	Remediation Services		1
23560052	LDEQ Ltr of Deficiencies to City of NO		Correspondence-Sent		9/3/2002		Solid Waste	Permits		8
23752968	LDEQ Field Interview Form		Reports	Inspection	9/18/2002		Solid Waste	Remediation Services		1
24000083	Blank Page		Permits		6/1/2002	permit application	Solid Waste	Permits		2
24000085	Blank Page		Permits		6/1/2002	permit application	Solid Waste	Permits		1
24000086	Blank Page		Permits		6/1/2002	permit application	Solid Waste	Permits		1
24042232	Certified Letter		Correspondence-Received	Green Cards	9/6/2002	70010320000287896296	Solid Waste	Permits		1
24421487	Closure Phase 2		Legal	Agreement/Contract	4/1/1995		Solid Waste	Enforcement		147
24566797	Earth Tech Phase III Closure Plan Cert LTR		Correspondence-Received		11/27/2002		Solid Waste	Permits		4
24884847	LDEQ ltr to City of		Correspondence-Sent		9/28/1999		Surface Water	Remediation Services		2
24909700	Proposed Phased Closure Plan	City of New Orleans	Plans		4/17/1996		Solid Waste	Enforcement		5
24910944	LDEQ Proposed Penalty		Compliance	Notice	5/28/1986		Solid Waste	Enforcement		4
25186197	Phase 3 Closure Certification NON APPROVAL asking for backup	LDEQ	Correspondence-Sent		1/14/2003		Solid Waste	Environmental Technology		1
26909834	******** Phase 3 Closure Certification**	**Earthtech (Montgomery Watson Design 11/1995, Amended 7/21/1998)**	**Reports**		**5/1/2003**	**Phase III Closure Certification**	**Solid Waste**	**Environmental Technology**		**215**
27595185	CONO Ltr to LDEQ for financial assurance data preparation		Correspondence-Received		5/22/2003		Solid Waste	Permits		1
28208269	Notice of Prep of New Landfill Permit Appl		Correspondence-Received		8/18/2003		Solid Waste	Permits		8

29232495	***** NEW LANDFILL PERMIT Response to Comments to Deficiencies #1 for Permit App 10/03/2003	City of New Orleans	Permits		10/3/2003	Response To Comments Notice Of Deficiency To The Permit Application **Volume 1 of 2**	Solid Waste	Permits	PER20020001	722
29234042	***** NEW LANDFILL PERMIT Response to Comments to Deficiencies #1 for Permit App 10/03/2003	City of New Orleans	Permits		10/7/2003	Response To Comments Notice Of Deficiency To The Permit Application **Volume 2 of 2**	Solid Waste	Permits	PER20020001	567
29263286	**Phase III Closure Cert Dwg Cover Sheet**	**Rust/Durr/City of NO**	**Dwg**		**6/18/2002**	**Phase III Closure Certification**	**Solid Waste**	**Environmental Technology**		**1**
29263287	**Phase III Closure Cert Dwg Plan/Photo (partial) 2 of 7**	**Rust/Durr/City of NO**	**Dwg**		**6/18/2002**	**Phase III Closure Certification**	**Solid Waste**	**Environmental Technology**		**1**
29263288	**Phase III Closure Cert Dwg Plan NW Corner 3 of 7**	**Rust/Durr/City of NO**	**Dwg**		**6/18/2002**	**Phase III Closure Certification**	**Solid Waste**	**Environmental Technology**		**1**
29263289	**Phase III Closure Cert Dwg Plan North Central Access road 4 of 7**	**Rust/Durr/City of NO**	**Dwg**		**6/18/2002**	**Phase III Closure Certification**	**Solid Waste**	**Environmental Technology**		**1**
29263290	**Phase III Closure Cert Dwg Plan North East Side 5of 7**	**Rust/Durr/City of NO**	**Dwg**		**6/18/2002**	**Phase III Closure Certification**	**Solid Waste**	**Environmental Technology**		**1**
29263291	**Phase III Closure Cert Dwg Geotextile Plan entire site 6 of 7**	**Rust/Durr/City of NO**	**Dwg**		**6/18/2002**	**Phase III Closure Certification**	**Solid Waste**	**Environmental Technology**		**1**
29263292	**Phase III Closure Cert Dwg Design Details 7 of 7**	**Rust/Durr/City of NO**	**Dwg**		**6/18/2002**	**Phase III Closure Certification**	**Solid Waste**	**Environmental Technology**		**1**
29287703	Flood ins map		Permits		10/3/2003		Solid Waste	Permits		1

29305605	Cit of NO Regional Soil Investigation Map		Permits		10/1/2003	Response To Comments Notice Of Deficiency To The Permit Application Volume 2 of 2	Solid Waste	Permits		1
29305606	Cit of NO Regional Soil Investigation Map		Permits		10/1/2003	Response To Comments Notice Of Deficiency To The Permit Application Volume 2 of 2	Solid Waste	Permits		1
29305617	Census map		Permits		10/1/2003	Response To Comments Notice Of Deficiency To The Permit Application Volume 2 of 2	Solid Waste	Permits		1
30456223	LDEQ Request to adj of New Orleans Dept. of Sanitation for Groundwater Sampling		Reports		12/16/2003	Request to adj of New Orleans Dept. of Sanitation for Groundwater Sampling	Ground Water	Environmental Technology		2
30506229	receipt of certified letter		Correspondence-Received	Green Cards	12/18/2003	7002 2410 0004 7605 4693	Solid Waste	Environmental Technology		2
30815476	LDEQ Review Letter for Phase III Closure Certification Report	Summarizes Phased Closure history	Permits		2/25/2004	Request For Information	Solid Waste	Permits	PER20030001	2
30849482	receipt of certified letter		Permits		2/27/2004	7002 2030 0002 8916 1630	Solid Waste	Permits		2
30876781	***** NEW LANDFILL PERMIT Application List of required additional info	LDEQ Notice of Deficiency	Permits	Application	3/3/2004	Request For Additional Information Permit Renewal Application	Solid Waste	Permits	PER20020001	4
31032622	Closure Plan Phase III Closure Cert Dwg Plan North East Side	RUST DWG - 5 of 6	Reports	Reference Materials	5/28/1999	Maps	Solid Waste			1
31032623	Closure Plan Phase III Closure Cert Dwg Plan North Central Access road	RUST DWG - 4 of 6	Reports	Reference Materials	5/1/1999	Maps	Solid Waste			1
31032624	Clsoure Plan Phase III Closure Cert Dwg Plan NW Corner	RUST DWG - 3 of 6	Reports	Reference Materials	5/1/1999	Maps	Solid Waste			1
31032625	Closure Plan Phase III Closure Cert Dwg Geotextile Plan entire site	RUST DWG - 6 of 6	Reports	Reference Materials	5/1/1999	Maps	Solid Waste			1

31032656	Closure Plan Phase III Closure Cert Dwg Cover Sheet	RUST DWG Cover Sheet	Reports	Reference Materials	5/1/1999	Maps	Solid Waste			1
31032657	Closure Plan Phase III Closure Cert Dwg Plan/Photo (partial)	RUST DWG - 1 of 6	Reports	Reference Materials	5/1/1999	Maps	Solid Waste			1
31044438	Certified Mail Receipt CONO		Permits		3/9/2004	Green Card Number 7002 2030 0002 8916 1654	Solid Waste	Permits		2
31263332	**NSPS Capacity Report for Air Emissions - Gentilly - reports 2.4 million cu yds of in-place waste - trash 0-13 feet deep**	CDM to LDEQ	Reports		7/9/1996		Air Quality	Permits		6
31263338	Draft of above listed document		Forms		7/9/1996		Air Quality	Permits		4
31311150	NEW Landfill Permit Application - Time Extension		Permits	Application	4/14/2004	Time Extension Request For Request For Additional Information	Solid Waste	Permits	PER20020001	1
31453786	MWH Americas, Inc.GW Monitoring Report	4-Apr	Reports	Monitoring	4/23/2004	GW & SW Monitoring	Solid Waste	Environmental Technology		64
31949875	NEW Landfill Permit Application - Time Extension to July 23, 2004	City of New Orleans	Permits	Application	6/29/2004	Time Extension Request - for LDEQ Request for Additional Information	Solid Waste	Permits	PER20020001	1
31960364	NEW Landfill Permit Application - Time Extension GRANTED	LDEQ	Permits		7/20/2004	Granting of Extension of Deadline for the Submittal of Additional Information	Solid Waste	Permits	PER20020001	1
32087444	******** Phase 2 Closure Certification Document June 2004**		**Permits**	**Application**	**6/4/2004**		**Solid Waste**	**Permits**	**PER20030001**	**190**
32362575	******** Phase 2 Closure Certification Letter**	**LDEQ**	**Permits**		**8/24/2004**	**Final closure**	**Solid Waste**	**Permits**	**PER20040001**	**2**
32362577	LDEQ Ltr to CONO for Review of Phase III Certification Closure	**LDEQ**	Permits		8/24/2004	Review of phase II certification of closure	Solid Waste	Permits	PER20030001	2
32401240	Certified Letter Receipt		Correspondence-Received	Green Cards	8/26/2004	Article # 7003 2260 0001 2756 9030	Solid Waste	Permits		1

32401242	Certified Letter Receipt		Correspondence-Received	Green Cards	8/27/2004	Article # 7003 2260 0001 2756 9047	Solid Waste	Permits		1
32447840	***** NEW LANDFILL PERMIT Application - RESPONSE TO - Second Notice Deficiency	Metroplex	Permits	Application	7/13/2004	Response to NOD's	Solid Waste	Permits	PER20020001	9
32451602	***** NEW LANDFILL PERMIT Application - TECHNICALLY COMPLETE	LDEQ	Permits		10/13/2004	Technically complete determination-permit application	Solid Waste	Permits	PER20020001	1
32455154	***** NEW LANDFILL PERMIT Application - RESPONSE TO - Second Notice Deficiency ADDENDUM	City of New Orleans - Amounts to be Portions of an Operations Plan	Permits	Application	9/24/2004	Additional information/addendum	Solid Waste	Permits		17
32465479	Certified Letter Receipt		Correspondence-Received	Green Cards	10/21/2004	Article number 7003 2260 0001 2755 9146	Solid Waste	Permits		1
32472837	***** NEW LANDFILL PERMIT APPLICATION With **FINAL REVISIONS October, 2004**	City of New Orleans	Permits	Public Notice	10/27/2004	Material associated with technically complete application for public review/permit # D-071-0264	Solid Waste	Permits	PER20020001	571
32473137	***** NEW LANDFILL PERMIT APPLICATION With **FINAL REVISIONS October, 2004 -- VOLUME II**	City of New Orleans - surface water calcs, geotechnical reports, slope stability analysis, settlement analysis	Permits	Public Notice	10/27/2004	Material associated with technically complete application for public review/permit # D-071-0264	Solid Waste	Permits	PER20020001	606
32572097	Certified Letter Receipt		Permits	Public Notice	10/27/2004	Proof of publication/affidavit for public notice dated 10/27/04	Solid Waste	Permits	PER20020001	1
32572237	Permit Application for Type III Construction		Permits	Public Notice	10/27/2004	Proof of publication/affidavit for public notice dated 10/27/04	Solid Waste	Permits	PER20020001	1
32584748	NEW TYPE III C&D LANDFILL PERMIT ISSUANCE LETTER		Permits		1/4/2005	Standard permit-solid waste type III landfill	Solid Waste	Permits	PER20020001	4
32599475	Certified Letter Receipt		Correspondence-Received	Green Cards	1/11/2005	Article # 7003 2260 0001 2756 0722	Solid Waste	Permits		1
32638685	Notice of Legal Publication		Permits	Public Notice	1/31/2005	Proof of publication	Solid Waste	Permits		5

32649220	New Landfill Permit - **Stability Analyses Appendix B - Exhibit 1**		Permits		6/4/2004	Stability analysis	Solid Waste	Permits		70
32874668	LDEQ Field Notes -- Pre-Operation Site Visit to locate GW Mon Wells		Reports	Inspection	5/11/2005	Old Gentilly Landfill - MW inspection	Ground Water; Solid Waste; Multi-Media	Environmental Technology		1
32888089	LDEQ Field Notes -- Pre-Operation Site Visit to see drainage ditch excavations		Reports	Inspection	5/13/2005	Old Gentilly Landfill - Almonaster - waste being exposed on top of cap	Solid Waste	Environmental Technology		1
32915538	**LDEQ Violation Letter to City of New Orleans -**	Cutting through Phase 2 Closure Cap -Phase 2 Certification Voided - alows NO to place excav wastes in 17 ac non-capped lndfl	Correspondence-Sent		**6/6/2005**	7003 2260 0000 5816 6185	Solid Waste	Permits		2
32919781	**Montgomery Watston /Metroplex request of LDEQ to plug GW wells, since they are in the C&D Landfill's designed footprint**		Permits	Application	**5/25/2005**	Request to P&A monitoring wells	Solid Waste	Permits	PER20040001	3
32934115	receipt of certified letter		Correspondence-Received	Green Cards	6/7/2005	7003 2260 0000 5816 6185	Solid Waste	Permits		1
32954323	**LDEQ Resp to Request to plug wells**		Correspondence-Sent		6/16/2005	7003 2260 0000 5816 6239	Solid Waste	Permits		1
32964013	LDEQ Letter to Metro plex re: Permit Application to Army Corp of Engrs for New C&D Landfill	1.96 Ac of wetlands. Adds requirements - BMPs	Permits	Certificate/License/Registration	6/20/2005	JP 050601-01	Surface Water	Permits	CER20050001	14
32985106	receipt of certified letter		Correspondence-Received	Green Cards	6/20/2005	7003 2260 0000 5816 6239	Solid Waste	Permits		1
33090639	**City of NO Request for 90-Day time extension to LDEQ's GW Well Plugging Response Ltr**		Permits	Application	6/30/2005	Extension request; groundwater monitoring	Solid Waste	Permits	PER20040001	2
33122656	**LDEQ grants 90-Day extension**		Correspondence-Sent		7/19/2005	7003 2260 0000 5816 6277	Solid Waste	Permits		1
33164810	**receipt of certified letter**		Correspondence-Received	Green Cards	7/22/2005	7003 2260 0000 5816 6277	Solid Waste	Permits		1

33182659	**Compliance Inspection Report**		Reports	Inspection	7/19/2005	07/19/05	Solid Waste	Surveillance	INS20060001	4
33374945	**Metroplex Ltr Certifying Re-Closure of Phase 2 Closure cap for drainage ditch construction**	**did place 2-feet of compacted clay - no clay materials testing or compaction tests were submitted with this Cert Ltr**	Correspondence-Sent		9/15/2005		Solid Waste	Permits		6
33415771	**LDEQ Approved Certification of Re-Closure of Drainage Ditches**		Correspondence-Sent		9/29/2005	7003 2260 0000 5816 6352	Solid Waste	Permits		1
33465488	LDEQ Inspection Report -	CH4 found, therefore no burning to be allowed onsite	Reports	Inspection	10/11/2005	FIF (Field Interview Form); Hurricane Katrina	Ground Water	Environmental Technology		1
33467034	LDEQ Warning Letter to City of NO to protect Closure Cap during landfill operations		Correspondence-Sent		10/13/2005	7004 1160 0000 3793 6719	Solid Waste	Permits		1
33487130	**LDEQ's ORDER TO COMMENCE TYPE III C&D LANDFILL OPERATIONS**	**Conditions: Complete all structures including fencing by 01/31/06; est. trust fund (Stormwater Ditches/Berms??)**	**Correspondence-Sent**		**9/29/2005**	**7003 2260 0000 5816 6345**	**Solid Waste**	**Permits**		**6**
33500349	**City of NO Request to LDEQ to Plug GW Wells**		**Permits**	**Application**	**10/12/2005**	**request to P&A Monitoring Wells**	**Solid Waste**	**Permits**		**1**
33578896	LDEQ Inspection of GW Wells		Reports	Inspection	11/3/2005	FIF - Old Gentilly LF - MW Inspection - New Orleans	Ground Water	Environmental Technology		1
33578898	LDEQ Field Interview Form	Found no yellow discharge in drainage ditches	Reports	Assessment/Investigation	11/2/2005	FIF - Old Gentilly LF - Complaint Investigation Inspection - New Orleans	Solid Waste	Environmental Technology		1
33588858	LDEQ Approves 24-hour 7 days per week landfill operation		Correspondence-Sent		11/3/2005		Solid Waste	Permits		1
33598909	**TYPE III C&D PERMIT APPLICATIONS ATTACHMENT 6 - LPDES NOTICE OF INTENT FORMS**	**Stormwater Calculations**	**Permits**	**Application**	***10/1/2003***	**C&D-G (Construction/Demolition Debris and Woodwaste Landfills) Notice of Intent**	**Surface Water**	**Permits**	**GEN20030001**	**212**

33620638	Missing		Compliance	Order	11/14/2005	Administrative order; WE-AO-05-0503; return receipt 7004 1160 0000 3794 7722	Surface Water	Enforcement	ENF20050001	4
33625079	Missing		Permits		11/14/2005	Opening of Old Gentilly Landfill	Solid Waste	Permits		2
33630249	Missing		Permits		11/9/2005	Public Records Request	Solid Waste	Permits		1
33636866	Missing		Permits	Variances/Exemptions	11/22/2005	Letter to allow disposal of category 1 & 2 non-regulated asbestos-containing material	Solid Waste	Permits		3
33637340	Missing		Correspondence-Sent		11/21/2005	Hurricane Katrina; Hurricane Rita	Solid Waste	Permits		1
33638065	Missing		Reports		11/11/2005	Potential Federal CERCLA liability for use of the Gentilly Landfill for debris operations from Hurricane Katrina.	Solid Waste	Permits		12
33638214	Missing		Correspondence-Sent		11/22/2005	Hurricane Katrina; Hurricane Rita	Solid Waste	Permits		1
33650713	Missing		Correspondence-Sent		1/4/2005	7003 2260 0001 2756 0722	Solid Waste	Permits		5
3410841	UST Diesel Tank Removal report, 1 UST leaked		Reports		1/25/1999	CLOSURE	Inactive & Abandoned Sites			67
7001188	City of New Orleans LTR to LDEQ requesting coopy of UST Removal report		Correspondence-Received		11/18/1988		Hazardous Waste			8
7737444	LDEQ Equipment & Maintenance Request Installation by City		Forms		7/23/1997		Hazardous Waste			2
7737446	E&E Ltr to LDEQ - submit list of Inactive and Abandon Sites		Forms		8/10/1995		Hazardous Waste			2
7737458	Waste Activity Verification from EPA		Forms		8/12/1997		Hazardous Waste			1
7737459	Waste Activity Verification from EPA		Forms		3/1/1996		Hazardous Waste			1

8820914	City of New Orleans LTR to LDEQ submitting 4 copies of Semi-Annual GW 4/96 CDM report	semi 4/96	Reports		8/14/1996	MONITORING	Solid Waste			63
8821027	CDM August 1998 SEMI ANNUAL GW SURFACE MONITORING	semi 8/98	Reports		8/1/1998	SEMI ANNUAL GW SURFACE MONITORING	Solid Waste			165
8840855	Facility Inspection Form - LDEQ	LDEQ	Reports	Inspection	2/1/1995		Solid Waste			3
8840879	CDM March 1994 Quarterly GW SURFACE MONITORING	quarterly 3/94	Reports		3/31/1994	MONITORING	Solid Waste			60
8840990	MW Oct 1995 Semi-Annual GW SURFACE MONITORING	semi 10/95	Reports		1/11/1996	MONITORING	Solid Waste			100
8880979	CDM March 1999 Quarterly GW SURFACE MONITORING	quarterly 3/99	Reports		3/22/2000	MONITORING	Solid Waste			63
9491504	MW Mar 1995 Semi-Annual GW SURFACE MONITORING	semi 3/95	Reports		3/1/1995	GW MONITORING	Solid Waste			85
9492070	**Phase III Closure - Project Manual**	**Earthtech**	**Permits**		**5/1/1999**	**PHASE III CLOSURE**	**Solid Waste**	**Permits**		**118**
9492199	**Phase III Closure - Project Manual**	**Earthtech**	Permits		5/1/1999	PHASE III CLOSURE	Solid Waste	Permits		118
9827910	CONO March 1983 Closure Plan	CONO	Closure Plan		3/1/1983	CLOSURE	Solid Waste	Permits		36
9827977	August 90 Monitor Well Analysis	Env. Mngnt., Inc.	Reports		8/1/1990	MONITORING	Solid Waste			43
9828051	Closure Plan Revision	James Montgomery	Permits		11/1/1996	CLOSURE	Solid Waste	Permits		23
9828085	CDM Aug 1997 Semi-Annual GW SURFACE MONITORING	semi 8/97	Reports		8/1/1997	SEMI ANNUAL GW SURFACE MONITORING	Solid Waste			68
9828194	CDM Aug 1997 Semi-Annual GW SURFACE MONITORING	semi 11/96	Reports		11/1/1996	SEMI ANNUAL GW SURFACE MONITORING	Solid Waste			62
9828297	***City Request for Alternative Cover to be up to 1.5' over remaining landfill***	***With LDEQ Approval Letter***	***Permits***		***7/21/1998***		***Solid Waste***			***9***

9828307	CONO Closure Plan Revision	Ltr & Report - References compliance with new 1986 Sampling Regs for GW	Permits		10/1/1987	CLOSURE	Solid Waste	Permits		35
9828327	***Phase III Closure Plan Ammendment***	***Montgomery Watson - Summary of alternative covers evaluated***	***Permits***		***2/1/1998***	***CLOSURE PLAN***	***Solid Waste***	***Permits***		***25***
9828363	CONO March 1983 Closure Plan	CONO	Permits		3/1/1983	CLOSURE	Solid Waste	Permits		34
9828373	MW October 1995 Semi-Annual GW SURFACE MONITORING	semi 10/95	Reports		10/1/1995	MONITORING	Solid Waste			102
9828428	Prelim Closure Plan	Burke Engineers	Permits		5/1/1987	CLOSURE	Solid Waste	Permits		28
9828477	Blank Ref Sheet		Reports	Reference Materials	5/1/1987	Maps	Solid Waste			1
9828479	Closure Plan	James Montgomery	Permits		3/1/1983	CLOSURE	Solid Waste	Permits		34
9828606	CDM March 1994 Quarterly GW SURFACE MONITORING , same as 8840879	quarterly 3/94	Reports		3/1/1994	MONITORING	Solid Waste			60
9828747	Environmental Management, Inc. Monitoring well analysis report	Feb-90	Reports		2/1/1990	MONITORING WELL ANALYSES	Solid Waste			44
9828842	Semi-Annual GW 4/96 CDM report	semi 4/96	Reports		4/1/1996	MONITORING	Solid Waste			64
9838142	Phase III Closure Plan	Montgomery Watson	Permits		11/1/1995	CLOSURE	Solid Waste	Permits		21
9838184	**Interim Cover Investigation**	**Montgomery Watson**	**Permits**		**6/16/1998**	**CLOSURE**	**Solid Waste**			**15**
9838220	same as above		Permits		6/16/1998		Solid Waste			15
9838236	Montgomery Watston Letter Report on Interim Cover and investigation of 2 adjacent landfills - same as 9838184	**Montgomery Watson**	Permits		6/16/1998		Solid Waste			17
9838274	CONO Ltr of clarification		Reports		7/21/1998		Solid Waste			3
9838288			Reports		7/21/1998		Solid Waste			3
9838292	Closure Plan	Montgomery Watson	Permits		11/1/1995		Solid Waste			20

9838323	Closure Plan	Montgomery Watson	Permits		11/1/1995	CLOSURE	Solid Waste	Permits		20
9838364	Closure Plan	Montgomery Watson	Permits		11/1/1995	CLOSURE	Solid Waste	Permits		20
9838395	Closure Plan	Montgomery Watson	Permits		11/1/1995	CLOSURE	Solid Waste	Permits		20
9838426	CDM Feb 1999 Semi-Annual GW SURFACE MONITORING	semi 2/99	Reports		2/1/1999	SEMI ANNUAL MONITORING	Solid Waste			62
9839615	Agreement between CONO and Sewerage and water board to construct levee - Recovery 1 Landfill site		Legal		6/29/1987		Solid Waste			8
9839633	ENFORCEMENT ORDER	LDEQ	Compliance	Order	12/17/1985		Solid Waste			2
9839635	Letter to CONO from LDEQ referencing Act449 for Solid waste management		Correspondence-Received		12/20/1985		Solid Waste			6
9839661	InterimOperation Eval. 11/85		Correspondence-Received		12/12/1985		Solid Waste			2
9839663			Reports		11/15/1985		Solid Waste			2
9839665	11/85 Status - "Water flooding site in rear"		Correspondence-Internal	Note/Memo	11/6/1985		Solid Waste			3
9839678			Correspondence-Received		9/11/1986		Solid Waste			2
9839680			Correspondence-Sent		9/6/1985		Solid Waste			1
9839681			Reports		7/25/1985		Solid Waste			3
9839684	Site Fact Sheet Inspection Summary for 1983 & 1984		Permits		1/10/1985		Solid Waste			6
9839710	Closure Compliance Order Extension		Compliance	Order	7/16/1985		Solid Waste			1
9839711			Correspondence-Received		6/19/1984		Solid Waste			1
9839712			Correspondence-Sent		5/28/1985		Solid Waste			1
9839714			Correspondence-Received		5/16/1985		Solid Waste			2
9839716			Correspondence-Sent		4/10/1985		Solid Waste			1
9839727			Reports		1/10/1985		Solid Waste			2
9839729			Correspondence-Received		10/26/1984		Solid Waste			2
9839731			Correspondence-Internal	Note/Memo	10/24/1984		Solid Waste			1
9839732	**Notic of Violation (NOV)**	**LDEQ**	**Correspondence-**		**10/4/1984**		**Solid**			**3**

			Sent				Waste			
9839735			Reports		9/28/1984		Solid Waste			1
9839736			Reports		8/8/1984		Solid Waste			2
9839758			Correspondence-Internal	Note/Memo	5/23/1984		Solid Waste			1
9839759			Reports		6/21/1984		Solid Waste			3
9839762			Correspondence-Internal	Note/Memo	8/1/1984		Solid Waste			2
9839764	James Mongomery Letter referencing 6 initial wells, 3 additional wells along almonaster, and 1 at levee toe.		Correspondence-Sent		4/4/1984		Solid Waste			3
9839777	LDEQ Notification to CONO of site is "open Dump"		Correspondence-Sent		3/26/1984		Solid Waste			11
9839798			Correspondence-Received		2/16/1984		Solid Waste			2
9839800			Correspondence-Received		2/23/1984		Solid Waste			2
9839802			Reports		1/10/1984		Solid Waste			2
9839804			Correspondence-Received		1/23/1984		Solid Waste			2
9839806			Correspondence-Received		10/24/1983		Solid Waste			1
9839827	Landfill received horse stable waste		Correspondence-Received		10/7/1983		Solid Waste			2
9839829			Reports		10/10/1983		Solid Waste			2
9839831			Correspondence-Received		10/4/1983		Solid Waste			2
9839833	north-facing old aerial photo of landfill		Reports		8/29/1983		Solid Waste			3
9839836			Correspondence-Received		8/16/1983		Solid Waste			2
9839848	LDNR - Office of Environmental Affairs - sent letter indicating "due to size of site, the proposed monitoring wells are too widely spaced for adequate monitoring" and nor are groundwater flow direction or monitoring wells specified as upgradient or downgradient,		Correspondence-Sent		8/3/1983		Solid Waste			1

9839849			Reports		7/22/1983		Solid Waste			2
9839851			Correspondence-Received		7/15/1983		Solid Waste			2
9839853			Correspondence-Internal	Note/Memo	7/15/1983		Solid Waste			1
9839854			Correspondence-Sent		6/24/1983		Solid Waste			3
9839877	LDNR - Office of Environmental Affairs - sent memo to CONO indicating 1) "direction of flow of groundwater has not been established in the closure plan," 2) nor are groundwater monitoring wells specified as upgradient or downgradient, and 3) due to size of site, the proposed monitoring wells are too widely spaced for adequate monitoring"	6/22/1983	Correspondence-Internal	Note/Memo	6/22/1983		Solid Waste			2
9839879			Correspondence-Received		6/22/1983		Solid Waste			3
9839882			Correspondence-Received		6/21/1983		Solid Waste			2
9839884	Landfill will be sprayed with DIBROM 14 insecticide		Correspondence-Received		6/17/1983		Solid Waste			1
9839885			Correspondence-Received		6/16/1983		Solid Waste			2
9839897			Reports		6/14/1983		Solid Waste			3
9839900			Reports		6/14/1983		Solid Waste			2
9839902			Correspondence-Internal	Note/Memo	6/1/1983		Solid Waste			1
9839903			Correspondence-Received		5/11/1983		Solid Waste			1
9839904			Permits		5/12/1983		Solid Waste			3
9839927			Correspondence-Received		5/13/1983		Solid Waste			1
9839928			Correspondence-Received		5/12/1983		Solid Waste			2
9839930			Compliance	Order	6/5/1983		Solid Waste			2
9839932	$50,000 fine for non-compliance to CONO		Correspondence-Received		6/3/1983		Solid Waste			1
9839933			Permits		6/2/1983		Solid Waste			3

9839936			Reports		6/6/1983		Solid Waste			2
9839948			Correspondence-Received		6/6/1983		Solid Waste			3
9839951			Reports		5/23/1983		Solid Waste			3
9839954			Correspondence-Sent		6/6/1983		Solid Waste			3
9839977			Reports		5/26/1983		Solid Waste			1
9839978			Correspondence-Received		5/27/1983		Solid Waste			1
9839979	DNR letter of $50,000 fine for non-compliance to CONO		Correspondence-Received		5/20/1983		Solid Waste			2
9839981			Correspondence-Received		5/27/1983		Solid Waste			1
9839982			Compliance	Order	5/16/1983		Solid Waste			2
9839984			Reports		4/11/1983		Solid Waste			2
9839986			Correspondence-Sent		5/16/1983		Solid Waste			1
9839987			Correspondence-Received		5/13/1983		Solid Waste			2
9839989			Correspondence-Received		5/12/1983		Solid Waste			1
9839990			Correspondence-Received		5/10/1983		Solid Waste			2
9839992			Reports		5/10/1983		Solid Waste			2
9839994			Correspondence-Internal	Note/Memo	5/13/1983		Solid Waste			1
9839995			Reports		4/11/1983		Solid Waste			1
9839996			Correspondence-Sent		4/29/1983		Solid Waste			2
9840018			Reports		4/21/1983		Solid Waste			2
9840020	DNR letter of $50,000 fine for non-compliance to CONO		Correspondence-Sent		4/19/1983		Solid Waste			1
9840021			Correspondence-Internal	Note/Memo	3/30/1983		Solid Waste			4
9840025			Permits		3/30/1983		Solid Waste			1
9840026			Correspondence-Internal	Note/Memo	3/17/1983		Solid Waste			1
9840047			Compliance	Order	2/21/1983		Solid Waste			2
9840049			Correspondence-Received		2/9/1983		Solid Waste			2
9840051			Correspondence-Sent		2/8/1983		Solid Waste			1
9840052			Reports		2/2/1983		Solid			2

							Waste			
9840054			Correspondence-Sent		1/11/1983		Solid Waste			1
9840055			Correspondence-Received		12/30/1982		Solid Waste			1
9840056			Compliance	Order	10/29/1982		Solid Waste			2
9840078			Permits		9/30/1982		Solid Waste			2
9840080			Correspondence-Sent		10/21/1982		Solid Waste			1
9840081	Letter that Baroid dumped flammable solid in landfill several times - Lignite and lime (magnesia) possible reactive metal thus RCRA hazardous waste		Correspondence-Received		10/18/1982		Solid Waste			6
9840097			Correspondence-Internal	Note/Memo	10/11/1982		Solid Waste			1
9840098			Reports		10/12/1982		Solid Waste			4
9840102			Correspondence-Sent		10/28/1982		Solid Waste			1
9840103			Correspondence-Sent		9/9/1982		Solid Waste			2
9840105			Correspondence-Sent		7/20/1982		Solid Waste			2
9840127			Correspondence-Sent		8/19/1982		Solid Waste			1
9840128			Correspondence-Received		8/10/1982		Solid Waste			2
9840130			Correspondence-Sent		7/29/1982		Solid Waste			1
9840131			Reports		5/18/1982		Solid Waste			2
9840133			Correspondence-Received		3/25/1982		Solid Waste			2
9840135			Reports		2/15/1982		Solid Waste			3
9840148			Correspondence-Received		10/30/1981		Solid Waste			2
9840150			Correspondence-Received		10/20/1981		Solid Waste			1
9840151			Correspondence-Received		10/20/1981		Solid Waste			1
9840152			Reports		10/6/1981		Solid Waste			1
9840153			Permits		7/9/1981		Solid Waste			1
9840154			Correspondence-Received	Green Cards	7/9/1981		Solid Waste			1
9840155			Correspondence-Sent		6/12/1981		Solid Waste			1

9840156			Reports		6/9/1981		Solid Waste			2
9840178	Open Dump Inventory Report - mentiones geology as Holocene coastal wetlands		Reports		10/27/1980		Solid Waste			32
9840264	Letter from NL Baroid with list of non-hazardous (possibly RCRA hazardous waste now)		Correspondence-Received		9/8/1982		Solid Waste			4
9840285	Montgomery Watson proposes 33 borings (1 per 5 acres) to help determine soil cover for interim cover and landfill encroachment issue		Correspondence-Received		4/23/1998		Solid Waste			3
9840308			Reports	Inspection	12/18/1998		Solid Waste			1
9840309			Correspondence-Received		4/23/1998		Solid Waste			2
9840311			Correspondence-Internal	Meeting	4/29/1998		Solid Waste			1
9840312			Reports		2/19/1998		Solid Waste			5
9840337	Memo summarizing the closure plan work & site description after Phase II cover placed.		Reports		2/13/1998		Solid Waste			4
9840341			Correspondence-Received		6/12/1996		Solid Waste			1
9840342			Correspondence-Sent		7/11/1997		Solid Waste			2
9840344			Reports		11/27/1996		Solid Waste			6
9840360	Description of DURR augering down 30" on 50' centers to test cap thickness.		Reports		10/21/1996		Solid Waste			3
9840363			Reports		8/21/1996		Solid Waste			3
9840366			Correspondence-Sent		6/22/1996		Solid Waste			2
9840388			Reports		6/3/1996		Solid Waste			2
9840390			Correspondence-Sent		5/2/1996		Solid Waste			3
9840393	CDM Propsal letter for MW4 and MW-5 rehab by adding x-tra concrete		Plans		2/27/1996		Solid Waste			7

9840410			Correspondence-Sent		4/16/1996		Solid Waste			1
9840411			Reports		2/26/1996		Solid Waste			2
9840413			Correspondence-Internal	Meeting	2/22/1996		Solid Waste			1
9840414			Correspondence-Received		4/17/1996		Solid Waste			2
9840416			Reports		5/3/1990		Solid Waste			2
9840438	April 1992 LDEQ letter discussing groundwater monitor well system under phase I, & mentions 2 upgradient and 4 downgradient wells. - and 4/15/91 memo referncing reversal of flow due to nearby waterway "seasonal Fluctuations)		Reports		3/25/1991		Solid Waste			4
9840442			Reports	Inspection	6/17/1992		Solid Waste			3
9840445			Reports		7/1/1993		Solid Waste			3
9840458			Reports	Inspection	6/30/1993		Solid Waste			3
9840461			Correspondence-Sent		1/31/1996		Solid Waste			2
9840464			Correspondence-Sent		6/21/1999		Solid Waste			5
9840489			Reports		9/4/1998		Solid Waste			1
9840490	Letter referencing "Interim Cover Investigation Results"		Reports		7/8/1998		Solid Waste			2
9840492			Correspondence-Sent		5/6/1998		Solid Waste			3
9840495			Correspondence-Received		12/20/1995		Solid Waste			1
9840496			Reports		12/21/1995		Solid Waste			4
9840520			Correspondence-Sent		8/24/1995		Solid Waste			1
9840521	Montgomery Watson MW-6 P&A report		Correspondence-Received		8/16/1995		Solid Waste			7
9840538	Montgomery Watson work plan to replace MW-6		Plans		7/28/1995		Solid Waste			5
9840543			Reports		7/19/1995		Solid Waste			2
9840545			Correspondence-Sent		7/18/1995		Solid Waste			2

9840557			Reports		7/7/1995		Solid Waste			5
9840562			Correspondence-Sent		6/1/1995		Solid Waste			2
9840564			Correspondence-Received		5/4/1995		Solid Waste			6
9840590			Correspondence-Received		4/24/1995		Solid Waste			5
9840595	LDEQ letter requesting abandonment of MW-6 because it is (4) feet below ground surface		Correspondence-Sent		3/6/1995		Solid Waste			3
9840608			Reports	Inspection	2/1/1995		Solid Waste			3
9840611			Reports	Inspection	2/1/1995		Solid Waste			7
9840639	CDM Jan1998 Semi-Annual GW SURFACE MONITORING	semi 1/98	Reports		1/1/1998	GW Monitoring Report	Solid Waste			63
9840965	MW February 1996 Closure Plan Amendment		Permits		2/1/1998		Solid Waste			25
9861028	LDEQ Waste Tire NOV		Compliance	Notice	12/4/1996		Solid Waste			4
9861032			Compliance	Notice	12/4/1996		Solid Waste			4
9861036			Compliance	Notice	12/4/1996		Solid Waste			4
9861050			Correspondence-Sent		8/8/1995		Solid Waste			2
9861052			Correspondence-Received		7/27/1995		Solid Waste			2
Figure 10 Sources	Holocene Geologic Framework of Lake Pontchartrain Basin and Lakes of Southeastern Louisiana	Chapter A of USGS Professional Paper 1634							Total Pages	7591
	Geological investigation of the Mississippi River deltaic plain:	Vicksburg, MS, U.S. Army Corps of Engineers, Waterways Experiment Station, Technical Report GL-84-15.	Dunbar, J.B., Blaes, M.R., Dueitt, S.E., May, J.R.,		1995					
	Holocene geologic framework of Lake Pontchartrain Basin and lakes of southeastern Louisiana:	Gulf Coast Association of Geological Societies, Transactions of the 47th Annual Convention, extended abstract,	Kindinger, J.L., Williams, S.J., Penland, Shea, Flocks, J.G., and Connor, P.F.,		1997					

		vol. XLVII, p. 635-638.								
	Recent geomorphic history of the Pontchartrain Basin: Baton Rouge, LA, Louisiana	State University Press, 114 p.	Saucier, R.T.		1963					
	Geomorphology and quaternary geologic history of the Lower Mississippi Valley	Vicksburg, MS, U.S. Army Corps of Engineers, Waterways Experiment Station, vol. 1, 364 p.			1994					

FACT SHEET

CITY OF NEW ORLEANS
D-071-0264
GENTILLY LANDFILL/C-0541
ORLEANS PARISH

July 10, 1980	EPA Potential Hazardous Waste Site Identification and Preliminary Assessment Form
October 27, 1980	EPA Open Dump Inventory Report
February 18, 1981	City notifies the Assistant Secretary of its operation of the Landfill.
April 14, 1981	Classification Inspection Report: 1. Improper Safety Devices 2. Inadequate Financial Responsibility 3. Improper Handling of Construction Debris and/or Tree Limbs 4. Improper Drainage 5. Improper Handling of Runoff and/or Leachate 6. Daily Waste Not Spread and/or Compacted Properly 7. Unsatisfactory Final Cover 8. Inadequate Gas Control 9. Evidence of Insects and Vectors Classified for Upgrade
June 12, 1981	Issued a letter stating that the Gentilly Landfill will be discussed at the ECC meeting on June 25, 1981.
June 25, 1981	ECC issued Interim Permit IP-0071 requiring the submission of a permit application within 180 days (December 25, 1981).
October 6, 1981	Inspection: 1. Small part of the dump was burning 2. Construction Demolition Debris was not covered 3. Cover and litter prevention devices were not employed 4. Waste was not being covered adequately 5. Cover was not adequate
October 20, 1981	Submitted a request for an extension to the Interim Permit No. IP-0071.
October 30, 1981	Granted a 180 day extension. Application due June 25, 1982.

February 10, 1982	Inspection: 1. Waste needs more cover and more often 2. Flies and birds noted It was noted that conditions had improved greatly.
March 25, 1982	Submitted a letter notifying that the City had issued a contract to obtain additional cover material to correct the violation of 2-10-82
May 13, 1982	Inspection: 1. Litter appeared to be blowing about the entire site 2. Cover was inadequate 3. Flies and birds noted 4. Access road to landfill almost non-existent
July 13, 1982	Inspection: 1. Inadequate waste management 2. No litter control 3. Inadequate coverage of waste 4. No rodent and vector control 5. Inadequate access road
July 29, 1982	Issued a letter noting that the City failed to either request an additional extension or to submit a permit application
August 10, 1982	Submitted a letter stating that the pending results of the Solid Waste Studies may offer several options to the City, including the probable closure of the Landfill. The deadline for the study is August 30, 1982
August 19, 1982	Acknowledged August 10, 1982 letter. Extend IP-0071 until September 23, 1982. Further discussion will be scheduled with the ECC on 9-23-82.
September 2, 1982	Inspection: 1. Waste management lacking 2. Litter scattered over site. 3. Bi-weekly cover required, but none used 4. Rodent food and harborage 5. Many flies and birds 6. Access Road impassable 7. Garbage mixed with appliances etc.
September 8, 1982	Letter from Baroid requesting permission to dispose certain materials in the landfill.
September 30, 1982	City representatives met to discuss operational deficiencies and status of the site. City decides that

	the site cannot be feasibly upgraded and must be reclassified for closure by June 25, 1985.
October 7, 1982	Inspection: 1. Flammable waste was dumped by Baroid which caused a fire at the dump 2. Small pools and ditches of water were noted near working face of area. 3. Litter is not being controlled 4. No cover is being applied to waste 5. No control of rodents etc. 6. Flies and birds in abundance 7. New access road in very bad condition
October 11, 1982	Inhouse Memorandum October 5, 1982 Regional Office got a call about a fire at the dump. The material dumped were ground lignite and pilot lime.
October 18, 1982	Submitted a letter addressing the deficiencies noted in the October 7, 1982 inspection.
October 21, 1982	Denying the request by Baroid (9-8-82).
October 28, 1982	Issued a letter rescinding IP-0071 and issuing a Closure Compliance Order C-0541. The Closure Compliance Order requires closure by June 25, 1985. Meeting with the ECC will take up the issue.
December 30, 1982	Submitted a request for a 60 day extension to submit the Closure Plan.
January 11, 1983	Granted an extension until March 31, 1983 to submit the closure plan.
January 26, 1983	Inspection Report: 1. Waste management is lacking 2. Drainage throughout the site is blocked an water is lying in all low areas. 3. Litter is blowing all over site 4. Required and/or agree upon Cover 5. No rodent or vector control 6. No access road 7. Existing piles of old waste discussed in the 9-28-82 Hearing remain untouched 8. Stable waste from the fair grounds is being dumped in standing water Recommends a Notice of Violation be issued.
February 8, 1983	Issued a letter noting the removal of the ash conveyer system and its contents, the addition of the

	concrete barrier to prevent wash down water from entering the streets, and to notify the City that the Office is aware of the public outcry against the site.
February 9, 1983	Submitted a letter in response to the January 26, 1983 inspection requesting that the Office reconsider issuing the NOV and provides reasons the violations.
February 21, 1983	Issued a Compliance Order requiring: I. Immediately begin spreading and compacting all incoming waste in the smallest practical area. II. In 30 days divert drainage away from the working area. III. Immediately control litter by application of cover material IV. In 30 days remove all litter and bury with cover material. V. Immediately begin covering incoming waste at least twice per week VI. Within 30 days cover all existing solid waste with 2' of cover. VII. Immediately deny food and harborage to rats and insects by using proper cover VIII. - In 30 days submit a plan to spray for flies IX. In 30 days provide an all weather road to access the site. X. - To cease acceptance and disposal of stable waste.
March 17, 1983	Internal Memorandum: Gerald Mathes with the regional office met with James M. Montgomery Consulting Engineers to discuss the closure plan for the site. The site again caught fire and now 100% of the site is exposed.
March 30, 1983	Submitted a Closure Plan for the Site.
March 30, 1983	Internal Memorandum: The Solid Waste Division met on site with Mr. Scioneaux and Mr. Stant to discuss the stable waste problem and the February 21, 1983 Compliance Order. The stable waste would be allowed on a load by load basis along with other conditions.
April 11, 1983	Interim Operation Evaluation as per Compliance Order dated February 21, 1983 II. Landfill area drainage remains inadequate III. Litter is not controlled V. Incoming waste is not covered. VI. Old completed area not covered VII. Food and Harborage is not denied

IX. Work is being done on the access road

April 19, 1983

Issued a letter stating the City had failed to comply with the Compliance Order and that further enforcement actions would be discussed at the ECC meeting on April 28, 1983.

April 21, 1983

Interim Operation Evaluation:
Review of compliance to the February 21, 1983 Compliance Order:

I. Incoming Waste handled adequately
II. Means to divert surface drainage done
III. No cover material noted except near the entrance shack
IV. Litter remains scatter about site
V. No cover is utilized on incoming waste
VI. No existing waste except some stable waste has been covered.
VII. Food and harborage remains available
VIII. No plan to apply pesticides have been received
IX. All-weather road has been installed.
X. Stable waste are no longer disposed of

Current findings:

1. Water remains on site
2. Litter a problem
3. No cover utilized in working area
4. No rodent program can be utilized until some cover is applied.
5. Flies & Birds are very apparent
6. Scavenger was noted on site.

April 29, 1983

Issued a letter stating the Division appealed to the ECC not to take further action because of your attempt to comply. The recommendation was accepted.

May 10, 1983

Interim Operation Evaluation:
Evaluation of the C.O.

I. Waste was being deposited in smallest area
II. Diversion of drainage was accomplished but there was still standing water
III. Litter fencing and cover was used at working face
IV. Majority of litter has been gathered.
V. Incoming waste covered at least every other day
VI. Not all waste is covered, approx. 5 acres of the freshest waste is covered.
VII. Food and harborage is being denied
VIII. City is spraying on occasion. No plan was received.
IX. All-weather road was installed

X. No stable waste taken to the site.

May 10, 1983 — Submitted a letter an update on compliance with the February 21, 1983 C.O.

May 12, 1983 — Submitted a letter with the Closure Plan

May 13, 1983 — Submitted a letter to assure the City's intent to comply with the new regulations and that the City is in need of the landfill.

May 13, 1983 — Internal Memorandum:
Met with the City officials on May 9, 1983 to discuss failure to comply with the C.O. in the allotted time frame.

May 16, 1983 — Issued a letter that the site will be discussed at the May 26, 1983 ECC meeting.

May 16, 1983 — Issued and Amended Compliance Order to allow for an additional thirty days to complete the requirements of the February 21, 1983 C.O.

A. To deposit all incoming waste in the smallest area spread and compact in layers
B. To divert drainage from landfill work area
C. To control litter
D. To remove litter and bury it in 30 days
E. To cover incoming waste twice per week in 30 days
F. To cover all exposed waste with 2' of cover
G. To deny food and harborage to rodents and insects
H. To submit a spray plan for insects
I. To provide an all weather road in 30 days
J. To limit waste to municipal waste.

May 23, 1983 — Interim Operation Evaluation:
Review of the C.O.

1. Not all waste is covered but a means to accomplish the task is being employed.
2. Plan has not been submitted but spraying continues.

Only Rodent and Vector Control remains questionable with regards to the Interim Operational Plan

May 26, 1983 — Submitted a letter thanking for the cooperation in bringing the City into compliance.

May 27, 1983 — Issued a letter regarding the acceptance of infectious wastes.

June 2, 1983	Submitted a letter addressing final cover, including pages of the Closure Plan
June 3, 1983	Issued a letter that the ECC has not made a motion to take further action at this time.
June 3, 1983	Interim Operation Evaluation: Only rodent control remains questionable.
June 6, 1983	Issued a letter thanking the City for their May 26, 1983 letter.
June 6, 1983	Submitted a letter that all hospitals utilizing the site had been made aware of the department policy. Issued an Amended Compliance Order requiring the site be closed in accordance with the May 12, 1983 Closure Plan
June 10, 1983	Interim Operation Evaluation: Litter, cover, and rodent control was questionable C.O. review 1. Covering of incoming waste is beginning to fall short of acceptable intervals 2. Waste on the eastern portion of the fill remains uncovered. 3. A written plan to apply pesticide has not been received. 4. Potholes need attention on all-weather road
June 22, 1983	Submitted a letter to address deficiencies in the operation
June 24, 1983	Issued a letter stating that the City must comply with Item VI which requires the placement of 2 feet of earth on the existing waste. To date the City has not complied. This overrides the Closure Plan.
June 29, 1983	Issued an Amended Compliance Order requiring the site to close in accordance with its May 12, 1983 Closure Plan by the date specified in Compliance Order No. C-0541.
July 15, 1983	Submitted a letter regarding the placement of final cover.
July 18, 1983	Interim Operation Evaluation: Found in compliance with the problem of flies and odor noted at the location of the new road. If garbage will continually be used to construct the road more cover will be required.
August 3, 1983	Issued a comment letter regarding the Closure Plan.

August 16, 1983	James Montgomery Engineers submitted a letter responding to the Closure Plan deficiencies.
August 29, 1983	Submitted a letter indicating that the site had been inspected for rodent activity.
October 4, 1983	Interim Operation Evaluation: 1. Cover inadequate 2. Abundance of flies 3. Repair or upkeep questionable on west road
October 5, 1983	Submitted a letter responding to the October 4, 1983 inspection.
October 7, 1983	Submitted a letter on the disposal of stable waste
October 24, 1983	Submitted a letter that the City has compiled with the deficiencies noted in the October 4, 1983 inspection.
January 6, 1984	Interim Operation Evaluation: 1. Bags of waste with blood soaked bandages, etc were noted. 2. Litter and a large uncovered area was noted 3. Large area of waste adjacent to the work face was uncovered. 4. Access road is in need of repair
February 15, 1984	Interim Operation Evaluation: All deficiencies are corrected
February 16, 1984	Submitted a letter regarding the January 6 and February 15, 1984 inspection. States the policy regarding infectious waste is difficult to enforce without the effect of law.
March 26, 1984	Issued a letter noting that the site is classified as an open dump and that it is the operators responsibility to insure that unapproved wastes are prohibited from being disposed.
April 4, 1984	Issued a letter acknowledging the receipt of the August 16, 1983 letter. The responses satisfactorily address the comments on the closure plan, but indicates that are additional requirements and a response is needed.
May 14, 1984	Interim Operation Evaluation: 1. Cover is not applied as frequently as required 2. Red bags of infectious waste and blue bags of hospital waste were noted in the workface.

June 12, 1984	Submitted response to April 4, 1984 letter
June 19, 1984	Interim Operation Evaluation: 1. Cover is not applied at required frequencies
June 19, 1984	Memorandum from Coastal Management citing concerns with the impact the treatment outfall and possible leachate problems will have on the coastal waters.
August 8, 1984	Interim Operation Evaluation: 1. Cover intervals 2. Waste management 3. Drainage was poor 4. Litter Control 5. Abundance of Flies 6. Access road in bad condition
September 28, 1984	Interim Operation Evaluation: 1. Cover 2. Insect and Vector Control
October 4, 1984	Issued a Notice of Violation for failure to cover all incoming solid waste and to deny food or harborage.
October 24, 1984	Internal Memorandum: Met with the City officials regarding the NOV.
October 26, 1984	Submitted a letter in response to the October 4, 1984 NOV.
January 10, 1985	Interim Operation Evaluation: 1. Cover 2. Insect and bird Control 3. Dumping in standing water
April 10, 1985	Issued a letter as a reminder that the site must close by June 25, 1985 in accordance with the October 28, 1982 Closure Compliance Order.
May 16, 1985	Submitted a letter stating that the closure is contingent on the implementation of Recover-South Sanitary Landfill. The closure of this site by June 25, 1985 would leave the city without sufficient disposal facilities.
May 27, 1985	T. Baker Smith and Son submitted a letter requesting a meeting to discuss the C.O.
May 28, 1985	Secretary issued a letter that their May 16, 1985 letter was being forwarded to Solid Waste for recommendations.

June 25, 1985	Issued a Closure Compliance Order Extension C-0451-E1 until September 27, 1985 to close the site in accordance with the March 30, 1983 Closure Plan.
July 16, 1985	Issued a letter with the Closure Compliance Order Extension C-0451-E1 attached and stating that a meeting should be arranged on August 5, 1985 to discuss final closure of the site.
July 9, 1985	Interim Operation Evaluation:
September 11, 1985	Submitted a letter requesting an extension for completion of closure.
November 15, 1985	Interim Operation Evaluation: 1. Litter was not being controlled 2. Lack of compaction 3. Lack of interim cover 4. Food and harborage not denied 5. Odors are apparent
December 12, 1985	Submitted a letter that they will be in Baton Rouge on December 17, 1985 to discuss closure.
December 13, 1985	Issued a letter regarding the Act 449 passed by the Louisiana Legislature in 1979.
December 26, 1985	Issued an Enforcement Order to the Orleans Parish Commission Council requiring: I. Site may continue operating until March 31, 1986 II. Submit written justification by January 20, 1986 detailing reasons why the site cannot close. Must provide supportive evidence in the form of financial data, etc. III. Submit a plan by March 1, 1986 establishing deadlines for meeting the requirements of LSWRR This Order was rescinded because it should have been issued to the City of New Orleans
January 10, 1986	Issued an Enforcement Order requiring the submission of a plan by March 1, 1986 establishing some guidelines for meeting the requirements of LSWRR. (See Order above, this Order was issued correctly to the City)
January 10, 1986	Issued a Compliance Order rescinding the Order issued on December 26, 1985 and its reissuance to the appropriate authority.

January 15, 1986	Submitted a letter requesting all further correspondence be directed to the Department of Sanitation.
January 20, 1986	Submitted a letter responding the the Enforcement Order issued on January 9, 1986.
March 18, 1986	Compliance Inspection to determine compliance with the January 10, 1986 Order: 1. Litter is not controlled 2. Waste dumped under supervision but not in smallest practical area nor was it spread and compacted. 3. Waste not being covered 4. Food and Harborage not denied 5. Daily inspections are not conducted 6. Access roads are in need of repair It was believed that the site has expanded onto additional acreage in violation of policy for dumps under an Order to Close
March 31, 1986	Issued an Enforcement Order extending the closure of the site until May 31, 1986.
April 16, 1986	Submitted a request for an exemption based on severe budget constraints.
April 22, 1986	Issued a letter denying the exemption request
April 28, 1986	Issued a Compliance Order based on the inspections conducted on November 15, 1985 and March 18, 1986 I. Submit in 10 days a plan to correct all violations noted in the Findings of Fact II. Control litter at the Site by proper application of cover and regular policing III. Restrict the deposition of all incoming waste to the smallest practical area IV. Provide within 10 days six inches of cover over all incoming waste V. Apply 6 inches of cover over all exposed waste VI. Deny food and harborage to rats, birds, and flies by proper application of cover. VII. Begin daily inspection for odors by walking the site VIII. Repair and maintain the access road in 20 days
April 28, 1986	Issued a Proposed Penalty Notice for $25,000
May 9, 1986	Submitted a response to the April 28, 1986 C.O.

January 15, 1986	Submitted a letter requesting all further correspondence be directed to the Department of Sanitation.
January 20, 1986	Submitted a letter responding the the Enforcement Order issued on January 9, 1986.
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May 9, 1986	Submitted a response to the April 28, 1986 C.O.

July 21, 1986	Submitted a letter stating the City has received bids on alternate sites for disposal
July 24, 1986	Issued a letter requesting the City to attend a meeting on August 19, 1986 to discuss the penalty and C.O.
August 19, 1986	Meeting with City officials to discuss penalty and violations.
August 29, 1986	Follow-Up Inspection: No change to the facility
September 18, 1986 and	Submitted a letter outlining planed improvements the contract between the City and Burk and Associates to prepare closure plan.
January 5, 1987	Compliance Inspection:
February 2, 1987	Burk and Associates issued a letter regarding the Ground Water Monitoring Plan
February 27, 1987	Submitted a letter outlining budget constraints
March 6, 1987 of	Meeting to discuss closure of Gentilly and upgrade Recovery I
May 28, 1987	Burk and Associates submitted a Closure Plan Revision.
July 6, 1987	Burk and Associates submitted a letter requesting permission to stockpile the clean demolition debris at the Site to fill the pond.
July 17, 1987	Granted permission to stockpile debris and the use of this clean fill at the site.
July 23, 1987	Solid Waste and Ground Water Protection Division representatives met on site.
July 27, 1987	Burk and Associates submitted a letter requesting a review schedule for the closure plan.
July 29, 1987	Issued a letter setting a meeting on August 25, 1987 to discuss the closure comments.
August 31, 1987	Meeting with City officials
September 1, 1987	Burk and Associates submitted a meeting report outlining the August 31, 1987 meeting.
September 22, 1987	Issued a letter listing the comments on the August 31, 1987 meeting and the closure plan.

October 6, 1987	Burk and Associates request an extension till October 30, 1987 to address number 6.
October 30, 1987	Submitted a letter with the six copies of the Closure Plan Revision
March 3, 1988	Issued a conditional approval of the Revised Closure Plan dated March, 1983 and revised on October 1987.
April 7, 1988	Issued a letter to DOTD requesting a variance for the monitoring wells near the levee.
July 1, 1988	Internal Memorandum regarding a fire investigated on June 7, 1988 but had been burning since June 2, 1988.
February 27, 1989	Follow-up inspection
May 3, 1989	Follow-Up inspection: Phase I had begun around March 27, 1989
May 19, 1989	Closure inspection for Phase I
October 17, 1989	Closure inspection for Phase I
December 13, 1989	Follow up inspection for Phase I. Only problem was the gate.
February 20, 1990	Issued a letter notifying the City that the closure was behind schedule and they needed to submit a revised implementation plan.
May 3, 1990	Submitted a response to the February 20, 1990 letter
May 3, 1990	Inspection indicated some problems with the concrete pad for the monitoring wells, some trash was observed and the gate was down.
September 26, 1990	Issued a letter for an Administrative Conference on October 16, 1990.